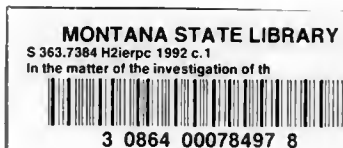


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**Streamside Tailings Operable Unit  
RI/FS Administrative Order on Consent  
Response to Public Comments on Draft Work Plan**





BEFORE THE  
DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
OF THE STATE OF MONTANA

IN THE MATTER OF:	)	REMEDIAL INVESTIGATION/
	)	FEASIBILITY STUDY
THE INVESTIGATION OF THE	)	ADMINISTRATIVE ORDER ON
ENVIRONMENTAL CONDITIONS	)	CONSENT
AT AND EMANATING FROM THE	)	
STREAMSIDE TAILINGS	)	DOCKET NO. SF-91-0001
OPERABLE UNIT OF THE	)	
SILVER BOW CREEK/BUTTE AREA	)	
NATIONAL PRIORITY LIST	)	
SITE	)	

TO: ATLANTIC RICHFIELD COMPANY, a Delaware corporation authorized  
to transact business in the State of Montana,  
  
Respondent.

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#### Attachments

1. Work Plan
2. Schedule
3. Federal law and regulation package
4. Form of disclaimer
5. Quality Assurance Project Plan
6. Sampling and Analysis Plan
7. Access Agreement
8. EPA Letter Regarding On Site Permit Exemption

BEFORE THE  
DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
OF THE STATE OF MONTANA

IN THE MATTER OF:	)	REMEDIAL INVESTIGATION/
	)	FEASIBILITY STUDY
THE INVESTIGATION OF THE	)	ADMINISTRATIVE ORDER ON
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NATIONAL PRIORITY LIST	)	
SITE	)	
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TO: ATLANTIC RICHFIELD COMPANY, a Delaware corporation authorized  
to transact business in the State of Montana,

Respondent.

I. JURISDICTION

This Remedial Investigation/Feasibility Study (RI/FS) Administrative Order on Consent ("Consent Order") is issued pursuant to the authorities vested in the State of Montana ("State") acting by and through its Department of Health and Environmental Sciences ("DHES"), by §§ 75-10-711 and 75-10-715, Montana Code Annotated ("MCA"), and Section 107 (42 U.S.C. § 9607) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 ("CERCLA") (42 U.S.C. §§ 9601 - 9675). DHES issues this Consent Order in consultation with EPA following EPA review and approval of the Consent Order and attachments thereto.

II. DEFINITIONS

Words used in this Consent Order are to be taken and understood in their natural and ordinary sense unless this Consent Order indicates that a different meaning was intended. Whenever the following terms are used in this Consent Order, or in documents incorporated herein or appended hereto, the following meanings shall apply:

A. "CECRA" means the Comprehensive Environmental Cleanup and Responsibility Act, §§ 75-10-701 through 724, MCA, including amendments to CECRA enacted by the 52nd Montana Legislature (1991 Session) when they become effective October 1, 1991.

B. "Consent Order" shall mean this document together with all attachments hereto and appendices incorporated herein. The terms of this document shall control over conflicting provisions in any appendix or attachment hereto.

C. "Contractor" shall mean the company or companies retained by, or on behalf of, Respondent to undertake and complete the Work or any part thereof. A Contractor, and any subcontractors retained by the Contractor, shall be deemed to be related by contract to the Respondent.

D. "Day" shall mean calendar Day, unless business Day is specified. Any deliverables, notices or other written documents that under the terms of the Consent Order would be due on a Saturday, Sunday or a State of Montana holiday (as identified by the Governor or by state law) shall be due on the following business Day.

E. "Dispose" or "Disposal" means the discharge, injection, deposit, dumping, spilling, leaking, or placing of any Hazardous or Deleterious Substance into or onto the land or water so that the Hazardous or Deleterious Substance may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

F. "EPA" means the United States Environmental Protection Agency.

G. "Facility" means Silver Bow Creek, its present stream channel, any associated historical flood plain of Silver Bow Creek (except for that soil and groundwater contamination which (1) is specific to the Rocker Timber Framing Plant (i.e. arsenic and potential organic compounds from wood treating activities) and (2) is to be investigated in the Rocker Operable Unit RI/FS) and any railroad beds and embankments adjacent to the Silver Bow Creek floodplain, from the western boundary of the Lower Area One Operable Unit to the southern boundary of the Warm Springs Ponds Operable Unit. Portions of the Streamside Tailings Operable Unit are located within the SW 1/4 of Section 16, the S 1/2 of Section 17, the S 1/2 of Section 18, the N 1/2 of Section 19, the N 1/2 of Section 20, the N 1/2 of Section 21, the N 1/2 of Section 22, and Section 23 of Township 3N, Range 8W of the Montana Principal Meridian; the S 1/2 of Section 13, the SE 1/4 of Section 14, the S 1/2 of Section 15, Section 16, Section 17, Section 18, the N 1/2 of Section 19, the NE 1/4 of Section 21, the N 1/2 of Section 22, Section 23, and the N 1/2 of Section 24 of Township 3N, Range 9W of the Montana Principal Meridian; the W 1/2 of Section 1, the E 1/2 of Section 2, Section 12, and the NE 1/4 of Section 13 of Township 3N, Range 10W of the Montana Principal Meridian; and the S 1/2 of Section 1, the SE 1/4 of Section 2, the E 1/2 of Section 11, the W 1/2 of Section 12, the W 1/2 of Section 13, the E 1/2 of Section 14, the E 1/2 of Section 23, the W 1/2 of Section 24, the W 1/2 of Section 25, the E 1/2 of Section 26, the E 1/2 of Section

35, and the W 1/2 of Section 36 of Township 4N, Range 10W of the Montana Principal Meridian.

H. "Fund" shall mean the Environmental Quality Protection Fund established in § 75-10-704, MCA.

I. "Hazardous or Deleterious Substance" shall mean:

1. a substance that because of its quantity, concentration, or physical, chemical, or infectious characteristics may pose an imminent and substantial threat to public health, safety, welfare or the environment and is:

a) a substance that is defined as a hazardous substance by Section 101(14) of the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601(14), as amended;

b) a substance identified by the administrator of the United States Environmental Protection Agency as a hazardous substance pursuant to Section 102 of CERCLA, 42 U.S.C. 9602, as amended;

c) a substance that is defined as a hazardous waste pursuant to Section 1004(5) of the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6903(5) as amended, including all substances listed or identified in 40 CFR 261; or

d) any petroleum product.

J. "NCP" means the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR, Part 300.

K. (the) "Parties" collectively, shall mean the State of Montana, acting by and through DHES, and the Respondent.

L. "Release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing of any Hazardous or Deleterious Substances into the environment.

M. "Respondent" shall mean the Atlantic Richfield Company, a Delaware corporation, ("ARCO"). The term "Respondent" shall include ARCO's successors and assigns and all persons acting with or through ARCO's authority and in ARCO's behalf, including ARCO's officers, directors, principals, employees, and agents, in their respective capacities where such persons otherwise meet the definitions of "owners" and "operators" under CECRA.

N. "Supplemental Work Plan" shall mean any Work Plan to be performed under the Additional Work Section, Section XII.



O. (the) "Work" shall mean all investigations, sampling, and other mitigative actions prescribed by this Consent Order, including the Work Plan, any Supplemental Work Plans and any schedules or plans established by the terms of this Consent Order.

P. "Work Plan" means the plan to perform the Work developed jointly by the Respondent and DHES, which is attached hereto and incorporated herein as Attachment 1 to this Consent Order.

### III. FINDINGS OF FACT

The State of Montana, acting by and through DHES, has made the following Findings of Fact concerning the Streamside Tailings Operable Unit:

A. Respondent ARCO is a corporation currently organized under the laws of the State of Delaware, with its corporate headquarters in Los Angeles, California. ARCO does business in the State of Montana.

B. Silver Bow Creek is a stream that forms in the mountains near Butte, Montana. It flows southerly, westerly, and then northerly through Butte and the southern portion of the Deer Lodge Valley. Before joining Warm Springs Creek to form the Clark Fork River, Silver Bow Creek flows into the Warm Springs Ponds, which are a series of three surface water and tailings impoundments, owned and operated by ARCO, lying east of Anaconda, Montana.

C. The Streamside Tailings Operable Unit includes Silver Bow Creek, its present stream channel and associated historical floodplain, and any railroad beds and embankments adjacent to the Silver Bow Creek floodplain, from the western boundary of the Lower Area One Operable Unit to the southern boundary of the Warm Springs Ponds Operable Unit. Portions of the Streamside Tailings Operable Unit are located within the SW 1/4 of Section 16, the S 1/2 of Section 17, the S 1/2 of Section 18, the N 1/2 of Section 19, the N 1/2 of Section 20, the N 1/2 of Section 21, the N 1/2 of Section 22, and Section 23 of Township 3N, Range 8W of the Montana Principal Meridian; the S 1/2 of Section 13, the SE 1/4 of Section 14, the S 1/2 of Section 15, Section 16, Section 17, Section 18, the N 1/2 of Section 19, the NE 1/4 of Section 21, the N 1/2 of Section 22, Section 23, and the N 1/2 of Section 24 of Township 3N, Range 9W of the Montana Principal Meridian; the W 1/2 of Section 1, the E 1/2 of Section 2, Section 12, and the NE 1/4 of Section 13 of Township 3N, Range 10W of the Montana Principal Meridian; and the S 1/2 of Section 1, the SE 1/4 of Section 2, the E 1/2 of Section 11, the W 1/2 of Section 12, the W 1/2 of Section 13, the E 1/2 of Section 14, the E 1/2 of Section 23, the W 1/2 of Section 24, the W 1/2 of Section 25, the E 1/2 of Section 26, the E 1/2 of Section 35, and the W 1/2 of Section 36 of Township 4N, Range 10W of the Montana Principal Meridian.

D. During the latter part of the nineteenth century, the area in and around Butte, Montana, was recognized as one of the

major mining centers of the world. To develop the rich deposits of minerals located there, particularly of copper and silver, hundreds of mines were opened and worked. To concentrate and further smelt and refine the mine ore, various parties, including predecessors in interest to ARCO, constructed smelters, mills, and concentrators in and around Butte along the banks of Silver Bow Creek.

E. These smelters and associated operations processed hundreds of tons of ore each day and disposed of large quantities of tailings, slimes, and other wastes into and along the banks of Silver Bow Creek, which entered the creek and were carried downstream. These operations came under the ownership and control of the Anaconda Copper Mining Company ("Anaconda"), as a result of various mergers, restructurings, transfers of assets, continuations of business activity, or other corporate action between approximately 1900 and 1910. As a result of one or more mergers, restructurings, transfers of assets, continuations of business activities, or other corporate action, ARCO is the successor in interest to and has assumed the liabilities incurred by Anaconda. Anaconda was the successor in interest to the Amalgamated Copper Mining Company and its subsidiaries ("Amalgamated") which owned or otherwise controlled the operation of several major mines, mills, smelters, and other facilities in and around Butte, Montana, in the late 1800s and the early 1900s. These facilities in Butte included, but were not limited to, numerous smelters, concentrators and mills which were located adjacent to Silver Bow Creek and discharged a variety of mining wastes directly to Silver Bow Creek.

F. The wastes disposed of from the facilities described above, including wastes in ponds built near these establishments, have continued periodically to leach or wash out into Silver Bow Creek. Anaconda owned and ARCO currently owns properties from which arsenic and heavy metals from mining wastes are leaching into Silver Bow Creek. However, most of the property along Silver Bow Creek is currently owned by persons who are not parties to this Consent Order.

G. These wastes now contaminate the river beds, banks, and floodplains of Silver Bow Creek and the Warm Springs Ponds and contain elevated concentrations of arsenic and heavy metals, including but not limited to barium, cadmium, chromium, copper, lead, manganese, and zinc.

H. High stream flow events in Silver Bow Creek, including historical flood episodes and snowmelt and rainfall runoff, have previously deposited and presently reentrain and redeposit streambank tailings and contaminated sediments within and along the banks of Silver Bow Creek. During extended summer dry periods, surface buildup of highly soluble metallic salts are evident on many of the tailings deposits along the banks of Silver Bow Creek. During heavy rainfalls, surface runoff containing dissolved concentrations of these metals salts are known to enter Silver Bow Creek.

I. A major area of alluvially-deposited tailings occurs at the Ramsay Flats, which is located south and southwest of the town of Ramsay in the N 1/2 of Section 22 and the N 1/2 of Section 23 of Township 3 N, Range 9 W of the Montana Principal Meridian. Preliminary investigations at Ramsay Flats have identified elevated concentrations of arsenic and heavy metals, surface salts containing up to 15 percent (by weight) of metals, and degradation of water quality in the shallow portions of the alluvial aquifer. In addition, during high flow events, elevated concentrations of iron, arsenic, and lead have been measured in the surface water in Brown's Gulch, which flows through the western portion of Ramsay Flats.

J. Preliminary investigations have shown that the EPA 1-hour aquatic life criteria for copper and zinc are regularly exceeded in Silver Bow Creek.

K. Some mining operations along Silver Bow Creek and its tributaries may have used mercury in the gold recovery process. Portions of Silver Bow Creek may also be contaminated by mercury, which may have been spilled or disposed of by such operations.

L. Arsenic is a human carcinogen and cadmium is a probable human carcinogen. Arsenic and cadmium can be acutely and chronically poisonous and can be fatal if ingested or inhaled in sufficient quantities by humans, livestock, and wildlife. Arsenic and cadmium compounds are absorbed into the body primarily through inhalation or ingestion. Lead is a probable human carcinogen, and is a cumulative poison which can cause neurologic, kidney, and blood cell damage in humans. Some lead compounds are also animal carcinogens adversely affecting the lungs and kidneys. Some copper and zinc compounds are toxic at elevated levels to a number of animal species, including humans. Copper and zinc are particularly toxic to fish. Severe illness and/or death can result from excessive exposure of humans, livestock, and wildlife to toxic levels of arsenic, cadmium, lead, copper, zinc and mercury, and these substances are Hazardous or Deleterious Substances as defined by § 75-10-701(6), MCA.

M. Actual and potential routes of migration or exposure of humans and animals to arsenic, cadmium, copper, lead, zinc, mercury and other Hazardous and Deleterious Substances that are present in the Streamside Tailings Operable Unit include direct human or animal contact with waters, soil, and sediment containing such substances; human inhalation of contaminated fugitive dust from wind transport of waste and soil particles containing such substances; migration of such substances to ground water; migration of such substances to surface water; and acute or chronic release of contaminants to the surface water.

N. Preliminary sampling results from the Montana Pole remedial investigation indicate that elevated levels of organic contaminants are present in Silver Bow Creek surface waters at the

USGS gaging station located near the 1-15/90 overpass near Butte. The Administrative Order on Consent for the Montana Pole Remedial Investigation/Feasibility Study (DHES Docket No. SF-90-00001) provides that downstream investigations of that organic contamination will be investigated as part of the Silver Bow Creek NPL site.

O. Known or suspected organic contaminants of concern from the Montana Pole site include pentachlorophenol (PCP), creosote, dioxins, furans, polynuclear aromatic hydrocarbons (PAH), and diesel fuel.

P. Pentachlorophenol and creosote are Hazardous and Deleterious Substances as defined by § 75-10-701(6), MCA.

Q. Dioxins and furans are constituents of pentachlorophenol and are Hazardous and Deleterious Substances as defined by § 75-10-7-1(6), MCA.

R. Creosote contains polynuclear aromatic hydrocarbons which are Hazardous and Deleterious Substances as defined by § 75-10-701(6), MCA.

S. Diesel fuel contains toluene, xylene, benzene, and ethylbenzene, which are considered Hazardous and Deleterious Substances.

T. Pentachlorophenol can cause damage to the human liver, kidney, nervous system, and immune system with chronic exposure. PCP has been demonstrated to cause cancer in animals. Some polynuclear aromatic hydrocarbons are known carcinogens. Benzene is considered a human carcinogen.

U. Actual and potential routes of exposure to PCP, dioxin, PAH, furans, diesel fuel constituents, and other Hazardous and Deleterious Substances include direct human or animal contact through ingestion or dermal absorption of soil, sediment, surface water or ground water, and inhalation of the Hazardous or Deleterious Substance in the air.

V. The Rocker Timber Framing and Treating Site Operable Unit of the Silver Bow Creek/Butte Area NPL site is located adjacent to the Streamside Tailings Operable Unit near Rocker, Montana. The Rocker facility historically has been used to treat mine framing timbers and utility poles with arsenic. In addition, creosote was used at the Rocker facility and may have been released to the Streamside Tailings Operable Unit by direct discharge or transport of creosote-contaminated fluvial sediment deposits from the Rocker site.

#### IV. CONCLUSIONS OF LAW

Based on the preceding Findings of Fact and the administrative record, the State of Montana, acting by and through DHES, has made the following Conclusions of Law:

A. Respondent is a "Person" as that term is defined by §§ 1-1-201(1)(b) and 75-10-701(9), MCA.

B. Silver Bow Creek, including all real property adjacent to the creek where Hazardous or Deleterious Substances have come to be located, is a "Facility" as that term is defined in § 75-10-701(4)(a) or (b), MCA.

C. Respondent owned some of the property contaminated with Hazardous or Deleterious Substances, and is the successor-in-interest to the generators of a substantial portion of the Hazardous or Deleterious Substances which have come to be located in and along Silver Bow Creek.

D. The Respondent is, and is hereby notified that it is found to be, a liable Person under § 75-10-715(1), MCA.

E. Arsenic, lead, copper, cadmium, zinc, mercury, pentachlorophenol, creosote, dioxin, furan, polynuclear aromatic hydrocarbons and diesel fuel constituents are Hazardous or Deleterious Substances as that term is defined in § 75-10-701(6), MCA.

F. There have been Releases of Hazardous or Deleterious Substances at the Facility, and there exists a substantial threat of continued and future Releases of Hazardous or Deleterious Substances at the Facility that DHES has reason to believe may present an imminent and substantial endangerment to the public health, welfare, or safety or the environment.

G. The information and remedial action required by this Consent Order are necessary and appropriate to identify the existence, nature, origin, and extent of the Release or the threat of Release and the extent and imminence of the danger to public health, welfare, safety, or the environment.

#### V. DETERMINATIONS

A. Based on the Findings of Fact and Conclusions of Law set forth above, the State of Montana, acting by and through DHES and in consultation with EPA, has determined that the actions required by and undertaken pursuant to this Consent Order are necessary to protect the public health and welfare and environment, are in the public interest, are consistent with the NCP and State requirements, and are appropriate remedial actions to contain, remove and abate the past Release of Hazardous or Deleterious Substances and presently continuing Releases and threatened

Releases of Hazardous or Deleterious Substances into the environment at and from the Facility.

B. The Respondent is qualified to perform the actions set forth in this Consent Order properly and expeditiously.

#### VI. STATEMENT OF PURPOSE

The objective of DHES and the Respondent is for the Respondent to conduct, with DHES oversight, an RI/FS consistent with CERCLA, the NCP, CECRA and this Consent Order, to assess Facility conditions in order to identify the nature and extent of contamination and evaluate ecological and human health risks, and to evaluate alternatives to the extent necessary to select an appropriate remedy for contamination at the Facility.

#### VII. TERMS AND CONDITIONS OF CONSENT

A. Respondent completely and voluntarily waives its rights to, and agrees not to:

1. appeal the issuance of this Consent Order;
2. challenge the jurisdiction (or the essential facts which create jurisdiction) or authority of DHES to enforce this Consent Order;
3. contest the validity or enforceability of any and all provisions, terms, and conditions of this Consent Order including the Work Plan and any Supplemental Work Plans adopted pursuant hereto, except as provided for by paragraph I of Section XXI.

B. Subject to the provisions of paragraph A of this Section VII, nothing in this Consent Order shall be construed as an admission of liability by Respondent nor as a limitation, restriction or waiver of any arguments or challenges which Respondent may have regarding the proper interpretation or construction of the provisions, terms and conditions of this Consent Order and attachments hereto.

C. Moreover, Respondent's agreement to comply with the provisions, terms and conditions of this Consent Order does not constitute an admission or acknowledgment of the facts asserted or implied herein. This Consent Order shall not operate as an admission by Respondent as to any factual assertion or legal conclusions outside of the context of proceedings to interpret or enforce this Consent Order. Respondent specifically does not admit or acknowledge the Findings of Fact or Conclusions of Law contained in Sections III and IV above, except to the limited extent noted in Subsection A, above. Respondent does acknowledge that the

RI/FS, as provided for in this Consent Order and as to be conducted by ARCO under this Consent Order, is consistent with the NCP.

#### VIII. PARTIES BOUND

All Parties are bound by the terms of this Consent Order. Respondent agrees that no change in ownership or corporate status shall in any way alter the status or responsibility of the Respondent under this Consent Order. Respondent shall be responsible for carrying out all actions required of Respondent by the terms and conditions of this Consent Order. Respondent shall be responsible for insuring that all Contractors, consultants, firms and other persons or entities acting on behalf of Respondent with respect to matters included herein will comply with the terms of this Consent Order.

#### IX. NOTICE

In accordance with the provisions of § 75-10-711, MCA, DHES hereby notifies Respondent and Respondent hereby acknowledges notice that Respondent is a person determined by DHES to be liable under § 75-10-715(1), MCA, for the Release(s) or threatened Release(s) of Hazardous or Deleterious Substances from the Facility. Moreover, Respondent is hereby notified and hereby acknowledges notice that the Work required by this Consent Order, the Work Plan and any Supplemental Work Plans is "appropriate remedial action" with regard to the Releases or threatened Releases at the Facility. Respondent is hereby notified, pursuant to § 75-10-711(3)(c), MCA, and hereby acknowledges notice that it may be required to reimburse the Fund for the costs of remedial action, including enforcement costs, litigation costs, attorneys' fees and expert witness fees, incurred by DHES in implementing, or in compelling Respondent to implement appropriate remedial action, following its failure or refusal to do so, and that Respondent may be subject to penalties pursuant to § 75-10-715(3), MCA.

#### X. ORDER

NOW, THEREFORE, RESPONDENT AGREES, AND DHES HEREBY ORDERS RESPONDENT, pursuant to §§ 75-10-711 and 75-10-715, MCA, and CERCLA § 107, to fully and timely comply with all of the terms, conditions and requirements of this Consent Order.

#### XI. DEVELOPMENT AND EXECUTION OF WORK PLAN

A. Respondent is ordered and agrees to conduct an RI/FS for the Facility pursuant to the terms of this Consent Order. The Respondent shall conduct the RI/FS in accordance with CERCLA, the National Contingency Plan (NCP), applicable EPA RI/FS guidance (identified in Attachment 3, attached and incorporated herein) and applicable state law and regulation. The Respondent shall conduct

the RI/FS in accordance with the attached Streamside Tailings RI/FS Work Plan. The attached Work Plan is hereby incorporated into this Consent Order as an enforceable part hereof (Attachment 1). The Respondent shall also conduct the RI/FS in accordance with the specific activities and schedules for conducting the RI/FS Work set forth in the attached schedule, Attachment 2.

B. The activities conducted under this Consent Order are subject to approval by DHES and must be sufficient to provide all necessary information for the RI/FS and for a record of decision that is consistent with CERCLA, the NCP and CECRA.

C. DHES reserves the right to comment on, modify, and direct changes for all deliverables as described in this paragraph. When DHES comments on or directs changes to deliverables, the following procedures shall apply:

1. Respondent must fully correct all deficiencies and incorporate and integrate all information and comments, as directed by DHES, within fourteen (14) Days of receipt of DHES' comments, unless a different time period is specified in the Schedule set forth in Exhibit 2 or the Work Plan.

2. Respondent may request, and DHES shall grant within seven Days of receipt of DHES' comments, a meeting to discuss any comments or directions from DHES. If DHES agrees that its comments or directions are incorrect or should be modified, Respondent may resubmit the deliverable in accordance with DHES' decision. DHES shall document any such decision by sending a letter stating which comments are incorrect or should be modified, within three (3) Days of the meeting.

3. At the time any revised deliverable is submitted, Respondent shall submit a cover letter describing how each substantive DHES comment was addressed and describing any additional substantive changes or additions in the resubmittal along with a justification for those changes or additions. The cover letter shall also include a certification that no substantive changes other than those identified in the cover letter or in a red-line draft were made. Failure to address any DHES comments or directions as described in this paragraph, or failure to identify additional substantive changes or additions is a violation of this Consent Order.

4. If Respondent disagrees with the substantive changes required by DHES, Respondent may include a disclaimer in a separate cover letter identifying the portion(s) of such documents with which the Respondent disagrees and the reasons for the disagreement. Whenever and to whomever the document is disseminated, DHES agrees to include such cover letter with the deliverable. Such cover letter shall be included in the Administrative Record for the Site pursuant to Section XIII. An example of such disclaimer is attached to this Consent Order as Exhibit 3.



D. If Respondent fails to comply with subsection C above, or if DHES determines that additional changes or additions were included in a resubmittal without identification, DHES retains the right to seek stipulated penalties, as described in Section XX, or statutory penalties, to perform its own studies, or to complete the deliverable or any portion thereof and seek reimbursement from Respondent for its costs. To the extent that DHES conducts or takes over some of the Work, Respondent shall incorporate and integrate information supplied by DHES into the final RI/FS. In that event, the preparer of the final RI/FS shall include a statement indicating which portions of the RI/FS were prepared by DHES.

E. DHES may also choose to enforce the terms of this Consent Order and compel the Respondent to produce the final RI/FS consistent with the comments of DHES.

F. Neither failure of DHES to expressly approve or disapprove Respondent's submissions within a specified time period, nor the absence of comments, shall be construed as approval by DHES.

G. The Parties agree and acknowledge that the development and performance of a Remedial Investigation (RI) and Feasibility Study (FS) will be conducted through the retention and direction of Contractors, in accordance with sound scientific, engineering and construction practices and shall be consistent with all applicable federal and state laws and regulations. The Respondent has provided DHES with information concerning the technical qualifications of the primary engineering and/or consulting firm and its principal person in charge who have been designated by the Respondent to conduct the RI/FS activities required by this Consent Order. DHES has determined that Respondent's Contractors are qualified to undertake the performance of the RI/FS. For any change by the Respondent in the primary engineering and/or consulting firm or its principal person in charge, the Respondent shall reaffirm this ability to carry out the task by notifying DHES in writing of the name(s) of the engineering and/or consulting firm(s) who will be responsible for carrying out the Work under this Consent Order, and the principal person in charge of conducting the Work for each such firm to be used in carrying out such work.

H. DHES, in consultation with EPA, shall prepare all necessary draft and final risk assessments, public health evaluations, and analyses of "Applicable or Relevant and Appropriate" federal and state standards, requirements, criteria and limitations (ARARs) required for the RI/FS work, and provide them to the Respondent in a timely manner for incorporation into the draft and final RI/FS reports. The Respondent may submit a preliminary scoping document addressing human health and environmental risk assessment issues to DHES no later than thirty (30) Days after Respondent's submittal of the 1992 data summary

report. The Respondent may submit an ARARs scoping document in accordance with the schedule provided in attachment 2. The Respondent agrees that no formal DHES response to the Respondent's documents is needed before draft DHES documents are published for public comment. DHES shall use best efforts to complete and deliver these reports to the Respondent within the time periods projected for completion and delivery in the RI/FS Work Plan. These projected time periods are estimates and are not binding upon DHES. DHES shall notify the Respondent as early as possible if it intends to complete and deliver the reports before the dates projected in the Work Plan and Schedule, Attachments 1 and 2. In addition, within forty-five (45) Days after Respondent's submittal of the 1992 data summary report, Respondent shall submit a memorandum to DHES evaluating institutional controls which may be selected for the Streamside Tailings Operable Unit.

I. Respondent shall incorporate the risk assessment, public health evaluation and ARARs analyses prepared by DHES in the draft and final RI/FS reports. Where Respondent disagrees with all or portions of the risk assessment, public health evaluation or ARARs analysis prepared by DHES, such disagreement shall not be expressed in the deliverables themselves. The Respondent shall provide any comments or objections concerning such documents separately, but not later than the close of the public comment period described in Section XXIV. Any comments received from the Respondent, complete with any responses provided by DHES, shall be included in the administrative record.

J DHES and the Respondent will meet on a quarterly basis to discuss implementation of the Work Plan, including sampling, data, and reports. All data, information or reports collected or prepared pursuant to the requirements of this Consent Order and available to Respondent prior to a quarterly meeting must have been provided to DHES at least 15 Days prior to the quarterly meeting. Neither DHES nor Respondent may assert a confidentiality claim with respect to any data in DHES's or Respondent's possession that was generated pursuant to this Consent Order.

K. In the event that subsequent amendments to CERCLA, the NCP, applicable EPA RI/FS guidance, or applicable state laws or regulations are promulgated after the effective date of this Consent Order which materially affect the rights or obligations of either party with respect to the substantive nature of the Work to be performed in the RI/FS, DHES and the Respondent agree to negotiate in good faith an amendment to this Consent Order to provide for such changes.

## XII. ADDITIONAL WORK

A. If additional investigations are determined by DHES to be necessary, DHES shall prepare a Supplemental Scope of Work and request in writing that the Respondent develop a Supplemental Work Plan for the additional Work as soon as possible and no later than

thirty (30) Days after such notification, and request in writing that the Respondent perform the additional Work. The Supplemental Scope of Work shall specify the basis and reasons for determining that additional Work is necessary. Prior to delivery of a Supplemental Scope of Work to the Respondent, DHES shall provide the opportunity for a scoping meeting to discuss the form and substance of the Supplemental Scope of Work. The Respondent shall respond in writing to the request for additional Work, and if Respondent agrees to undertake the additional Work, a Supplemental Work Plan shall be prepared by the Respondent and submitted to DHES for review and comment. DHES shall provide one round of comments to Respondent which will be incorporated into the Supplemental Work Plan unless the dispute resolution process found in Section XXI is invoked. The Supplemental Work Plan developed for that additional Work shall, upon approval by DHES, be attached to and shall be deemed incorporated into this Consent Order.

B. If the Respondent does not agree to perform the additional Work and/or does not prepare an acceptable Supplemental Work Plan, it shall provide its rationale in writing. DHES shall respond in writing to the Respondent's comments. If DHES and Respondent cannot agree on the additional Work within thirty (30) Days of Respondent's receipt of DHES's response, the dispute shall be subject to the dispute resolution process in Section XXI. The Respondent hereby agrees to perform any additional Work within the scope of the original Work Plan which is determined, pursuant to the dispute resolution process, to be necessary. Any failure by the Respondent to perform additional Work within the scope of the original Work Plan shall be deemed to be a violation of this Consent Order. Any failure by the Respondent to perform additional Work outside the scope of the original Work Plan shall not constitute a violation of this Consent Order. As used in this Section, "the scope of the original Work Plan" shall mean the investigation, for the purposes expressed in Section VI, above, of contamination associated with the Facility, the approximate boundaries of which are shown in the Work Plan (Attachment 1).

C. Various repository siting studies are to be conducted by ARCO and/or EPA during the period of this RI/FS. The Parties anticipate that those studies will adequately address the issues relating to possible disposal sites for Streamside Tailings wastes. However, augmentation of these repository siting studies may be requested by DHES and will be conducted by ARCO as additional Work, if DHES determines that the studies conducted are not adequate to allow full evaluation of alternatives, including possible removal and disposal of tailings and contaminated soils, in the feasibility study.

D. If the Respondent does not perform the additional Work required of it following the conclusion of the dispute resolution process, it may be subject to statutory penalties for each Day it fails to comply with the requirements of this Consent Order. In addition, DHES reserves the right to conduct the RI/FS activities

described in the Supplemental Scope of Work and/or pursue any other actions authorized by applicable state or federal law.

### XIII. SITE ACCESS AND SAMPLING

A. Respondent agrees to permit the State and EPA and their authorized representatives to have unrestricted access to portions of the Facility that may be owned or controlled by Respondent which are either impacted by Releases or utilized to conduct any activities required by this Consent Order. Such grant of access shall be for the purpose of conducting, overseeing and inspecting any and all activities which have been or are being conducted, or overseeing and inspecting conditions which are addressed under or impacted by the activities required to be undertaken pursuant to this Consent Order. Nothing herein shall limit or restrict any statutory inspection, site access, or sampling authorities vested in the State or EPA by applicable federal or State law.

B. The Respondent hereby consents to observation by State and EPA representatives at any time during the performance of Work required under, performed in connection with, or undertaken in furtherance of the purposes of this Consent Order. The Respondent consents to the State and EPA taking samples or split samples on any property owned or controlled by Respondent which is part of the Facility at any time.

C. The Respondent shall notify DHES and EPA not less than seven (7) Days in advance of any sample collection activity to be conducted by the Respondent or its representatives for the purposes of this RI/FS, as expressed in Section VI. Upon the request of DHES or EPA, the Respondent shall provide split or duplicate samples to DHES and EPA of any samples collected by or on behalf of the Respondent, provided that a sufficient quantity of materials to be sampled are available on the day of sampling. The procedures for collecting such split or duplicate samples will be the procedures set forth in the Quality Assurance Project Plan (QAPP) for the Silver Bow Creek site, set forth as Attachment 5.

D. To the extent access to property owned by third parties is required in order for the Respondent to carry out the requirements of this Order, Respondent agrees to and shall use its best efforts to obtain access for itself and the State and EPA. Any agreement must allow the Parties to sample or monitor environmental media, including the right to split samples, on property owned by third parties pursuant to the requirements of the Consent Order and attached Work Plan. Such site access agreements shall generally be in the form included as Attachment 7 to this Consent Order. DHES shall, consistent with Federal or State authority, obtain access for the Respondent if the Respondent provides documentation to DHES demonstrating that it has used its best efforts to obtain access on its own and failed to obtain access. The Respondent agrees that it will reimburse DHES for all expenses not inconsistent with the NCP which DHES incurs or becomes

liable for in gaining access for the Respondent, at the request of the Respondent, and will indemnify DHES as provided in Section XXV of this Consent Order.

E. When working on property owned by third parties, the Respondent shall provide the opportunity for the third party to request and obtain a split sample. The Respondent shall document that such an opportunity was provided.

F. DHES and EPA shall notify the Respondent, orally or in writing, not less than seven (7) Days in advance of any sample collection activity conducted by or on behalf of the State or EPA for the purposes of this RI/FS, as expressed in Section VI. Upon the request of the Respondent, the State and/or EPA shall provide split or duplicate samples to the Respondent of any such samples, provided that a sufficient quantity of the materials to be sampled is available on the day of sampling. The procedures for collecting such split or duplicate samples will be the procedures set forth in the Quality Assurance Project Plan (QAPP) for the Streamside Tailings Operable Unit, set forth as Attachment 5.

#### XIV. COMPLIANCE WITH OTHER LAWS

All actions carried out by the Respondent pursuant to this Consent Order shall be done in full compliance with all applicable federal, State and local laws and regulations. The Respondent shall be responsible for obtaining all federal, State or local permits which are necessary for the performance of any Work hereunder. To the extent legally permissible, DHES agrees to exempt all remedial actions conducted entirely on site pursuant to this Consent Order from State and local administrative or procedural permit requirements, if necessary to complete the requirements of this Consent Order in a timely fashion. In the letter included in this Consent Order as Attachment 8, EPA has determined that the Work activities conducted on site are exempt from Federal, State and local administrative or procedural permit requirements as provided by Section 121(e) of CERCLA, if they are conducted in compliance with this Consent Order and the NCP.

#### XV. QUALITY ASSURANCE/QUALITY CONTROL

A. The Respondent shall comply with all approved quality assurance, quality control, and chain of custody procedures and requirements as they pertain to all sampling as set forth in the Sampling and Analysis Plan (SAP), the Quality Assurance Project Plan (QAPP) and the Laboratory Analytical Protocol (LAP) established under this Consent Order.

B. In order to provide quality assurance and maintain quality control with respect to all samples collected pursuant to this Consent Order, the Respondent shall:

1. Arrange for access for DHES and its authorized representatives, upon reasonable notice to Respondent and during regular business hours, to any laboratories and personnel utilized by the Respondent for analyses;

2. Ensure that all sampling and analyses are performed according to the methods set forth in the Sampling and Analysis Plans (SAPs) attached and incorporated herein as Attachment 6, the QAPP and the LAP established under this Consent Order;

3. Ensure that any laboratories utilized by the Respondent for analyses prepare and maintain adequate documentation of compliance with the requirements described in XV.B.2 (above) and that such documentation be made available to DHES and the Respondent upon request;

4. Ensure that any laboratories utilized by the Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA under CERCLA. As part of such a program, and upon request by DHES, such laboratories shall perform such analyses of samples provided by DHES as are necessary to demonstrate the quality of each laboratory's analytical data.

5. If Respondent utilizes a laboratory which participates in EPA's Contract Laboratory Program, paragraphs 1 and 4 of this Section XV shall be inapplicable.

#### XVI. PROJECT COORDINATORS AND REPORTING

A. On or before the effective date of this Consent Order, the Respondent shall designate one or more Project Coordinators and alternate Project Coordinators. The DHES Project Coordinator will be Neil Marsh, and the alternate Project Coordinator will be Karen Zackheim. The EPA Project Coordinator will be Mike Bishop, and the alternate Project Coordinator will be Bob Fox. The Project Coordinator for the Respondent will be David Sinkbeil. The alternate Project Coordinator for the Respondent will be Sandra Stash. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Order. To the maximum extent practicable, communications between the Respondent and DHES, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to or required by the terms and conditions of this Consent Order, shall be directed through the Project Coordinators. If the Project Coordinator is unavailable, such information shall be directed through the alternate Project Coordinator. During implementation of the Work Plans and any Supplemental Work Plans, the Project Coordinators shall, whenever possible, attempt in good faith to resolve disputes informally through discussion of the issues.

B. DHES and EPA and the Respondent shall each have the right to change their respective Project Coordinators, alternate Project Coordinators, and attorneys or the addresses to which documents or notices are to be sent. Such a change shall be accomplished by notifying the other Parties in writing as soon as possible after making the change.

C. The DHES Project Coordinator shall have, and may exercise, the authority vested in DHES by §§ 75-5-621 and 75-10-712, MCA. In addition, he shall have the authority to immediately halt any activities at the Streamside Tailings Operable Unit which are being or may be undertaken pursuant to this Consent Order and which cause or threaten to cause a public nuisance or which violate or threaten to violate any requirements of applicable federal or state law, this Consent Order, or a Work Plan or Supplemental Work Plan established under this Consent Order.

D. When DHES's Project Coordinator takes action under paragraph XVI.C, he may orally direct a substantive change not inconsistent with the NCP to the requirements of the Work Plan. Such a change shall be followed up in writing by the DHES Project Coordinator within three (3) business days of the oral direction. "Substantive change," for the purposes of this paragraph, shall be defined as any change that contradicts the written language in the Work Plan attached hereto, and any Supplemental Work Plans, provided, however, that any substantive change which substantially increases the cost to, or obligations of, the Respondent, other than substantive changes to address emergency conditions, shall be proposed as Additional Work under Section XII of this Consent Order. Such direction shall be subject to dispute resolution after receipt of written notice specified above, unless covered under the conditions described in Section XXI.J. Once a final determination has been made pursuant to the dispute resolution process described in this Consent Order, the Parties agree to incorporate such change into this Consent Order by written amendment. Any substantive change ordered by DHES's Project Coordinator which affects the Schedule of activities set forth in Attachment 2, shall be treated as a force majeure event pursuant to Section XVII of this Consent Order. If dispute resolution procedures are not initiated within 10 business days of receipt by the Respondent of the written notice referenced in paragraph XVI.D above, the written notice shall be incorporated into this Consent Order as a modification and shall become a fully enforceable part thereof.

E. The absence of the DHES Project Coordinator from the Facility shall not be cause for stoppage of the Work to be performed pursuant to this Consent Order.

F. Except for initial oral notices specified in Sections XVI.D., XVII.B. and XXI.A., all notices given pursuant to this Consent Order shall be given in writing.

G. One copy of all plans, reports, notices and other Work products required under the terms of this Consent Order shall be

sent by certified mail, return receipt requested, or equivalent service to each of the following:

Neil Marsh  
Department of Health & Env. Sciences  
Superfund Program  
Cogswell Building  
Helena, MT 59620

William Kirley, Esq.  
Special Assistant Attorney General  
Legal Division  
Cogswell Building  
Helena, MT 59620

EPA Remedial Project Manager  
Streamside Tailings Operable Unit  
U.S. Environmental Protection Agency  
Region VIII  
Federal Building  
301 South Park  
Helena, MT 59626-0096

EPA Attorney  
Streamside Tailings Operable Unit  
U.S. Environmental Protection Agency  
Region VIII  
Federal Building  
301 South Park  
Helena, MT 59626-0096

H. Copies of all plans, reports, notices and other Work products to be given to ARCO shall be sent to the following address:

Mr. David Sinkbeil  
ARCO  
307 East Park Avenue, Suite 301  
Anaconda, MT 59711

with copies to:

Pam Sbar, Esq.  
ARCO  
555 Seventeenth Street, 16th Floor  
Denver, CO 80202

and

Linda L. Rockwood, Esq.  
Parcel, Mauro, Hultin & Spaanstra, P.C.  
1801 California, Suite 3600  
Denver, CO 80202



I. By the end of each month, Respondent shall provide to DHES and EPA a monthly progress report describing and summarizing site activities during the prior month.

J. By the end of each month, DHES shall provide to Respondent a monthly progress report describing and summarizing all Streambank Tailings and Revegetation Studies ("STARS") activities during the prior month.

K. Monthly progress reports shall identify all field activities, list all sample packages sent to and analytical packages received from laboratories, describe data validation, treatability study, alternative evaluation and report preparation activities, and identify problems encountered, such as access difficulties or delay in data receipt, for the reporting month.

#### XVII. FORCE MAJEURE

A. "Force majeure" for purposes of this Consent Order, including all attachments, is defined as any event arising from causes beyond the control of Respondent and of any entity controlled by Respondent, including its Contractors, that delays the timely performance of any obligation under this Consent Order notwithstanding Respondent's best efforts to avoid the delay. The requirement that Respondent exercise "best efforts to avoid the delay" includes using best efforts to reasonably anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (a) as it is occurring, and (b) following the potential force majeure event, such that the delay is minimized to the greatest extent practicable. Force majeure does not include financial inability to complete the Work. Force majeure may include Acts of God, war, revolution, riots, strikes, fires, or floods. Force majeure shall also include, but is not limited to, delays or failures of governmental agencies in issuing necessary permits or approvals, provided such permits are required and the Respondent has timely submitted complete applications and provided all required information. Such circumstances may also include delays in obtaining access to property of third Parties, provided that the Respondent has made a good faith and timely effort to secure such access, and provided that the Respondent has requested assistance from DHES in a timely manner. Finally, force majeure may include delays, beyond time periods estimated in the Work Plan, by DHES in providing comments or other key documents, provided that the delay shortens the period allowed for the Respondent to comply with a deadline. The Respondent shall bear the burden of proving by a preponderance of the evidence that any failure to comply with the requirements of this Consent Order, the Work Plan or a Supplemental Work Plan is due to force majeure.

B. The Respondent shall notify the DHES Project Coordinator(s) orally, within 48 hours of the time Respondent learns of the circumstances, and shall, within seven (7) Days of

oral notification to DHES, notify DHES in writing of the anticipated length and cause of delay, the measures taken and to be taken to prevent or minimize the delay, and the timetable by which the Respondent intends to implement those measures. Oral notification to DHES must occur in no event more than 48 hours after Respondent or Respondent's contractor(s) become aware of the occurrence or event causing the delay or failure in whole or in part. Oral notification to the DHES Project Coordinator, Neil Marsh, or his designee, shall be accomplished by calling (406) 444-1420. After business hours, oral notification to the State Project Office may be to Neil Marsh at (406) 443-7326, Karen Zackheim at (406) 449-6366 or Vic Andersen at (406) 458-5118. Oral notification of the Federal Project Coordinator shall be to Mike Bishop at (406) 449-5414. Failure to timely make the oral and written notifications to DHES required by this paragraph B of any event for which force majeure is claimed shall waive the defense otherwise provided by this paragraph, but only for the event for which notice has not been made.

C. If the Respondent demonstrates to DHES that the delay has been or will be caused by circumstances beyond the control of the Respondent and that it exercised best efforts to prevent the delay, the time for performance for that element of the Work Plan or Supplemental Work Plan shall be extended for a period equal to the delay. The extension of time may include any reasonable additional time necessary, not to exceed 15 Days, to mobilize manpower or machinery after the elimination of the force majeure event. This shall be accomplished through written notice or through an amendment to this Consent Order, as appropriate. Such an extension does not alter the schedule for performance or completion of other tasks required by the Work Plan or Supplemental Work Plans unless these are specifically altered by amendment of the Consent Order, or unless the Work on those other tasks depends on continued Work on the tasks delayed by the force majeure event. In the event further Work depends on the Work delayed by the force majeure event, the time for performance of the further Work shall be extended only for a period equal to that of the delay caused by the force majeure event and any reasonable additional time necessary, not to exceed fifteen (15) Days, to mobilize manpower or machinery.

D. In the event that DHES and Respondent cannot agree that any delay or failure has been or will be caused by circumstances beyond the control of the Respondent, or if there is no agreement on the length of the extension, the dispute shall be resolved in accordance with the provisions of Section XXI of this Consent Order. If Respondent does not prevail in the dispute resolution pursuant to the dispute resolution process, any stipulated penalties which would apply by operation of Section XX of this Consent Order shall apply during the term of the dispute resolution procedures, as provided for in Section XXI.

E. If the late receipt of DHES comments or documents results in Respondent's inability to comply with a deadline due to inclement weather conditions which substantially adversely affect

the specific activity to be performed, DHES and the Respondent agree to negotiate a schedule extension.

#### XVIII. RECORD PRESERVATION AND EXCHANGE

A. The Respondent agrees that it shall preserve during the pendency of this Consent Order and for a period of six (6) years from the date of termination of this Consent Order, all records or documents in its possession or in the possession of its employees, agents, accountants, contractors, or attorneys that relate to the Work performed at the site pursuant to this Consent Order. Upon written request by the State, Respondent shall within twenty (20) Days make all such documents not exempt from disclosure by law available to the State. At the end of this six (6) year period, the Respondent may destroy any such records, but only after notifying DHES at least thirty (30) Days in advance and allowing DHES to inspect and copy any such records. At any time before the end of the six (6) year period, Respondent may discharge its obligations under this Section with respect to documents not exempt from disclosure by law by notifying DHES in writing and providing DHES with originals, if available, or unaltered reproductions or copies in possession of Respondent, of all such reports and documents not already provided to DHES and not exempt from disclosure by law. If unaltered reproductions or copies are provided, the custodian of the records shall certify that to the best of the custodian's knowledge, the copies were made contemporaneously with the original and that the copies are an accurate reproduction of the original. Thereafter, the records may be destroyed except that the Respondent must preserve all records and documents which the Respondent claims are exempt by law from disclosure for the entire six (6) year period referenced above.

B. All records, documents, raw data, and other information (including, but not limited to, field notes, daily ledgers, diaries, memoranda, and laboratory data validation reports), not otherwise exempt from disclosure by law, which are within the custody or control of Respondent or its Contractors relating to performance of any of the activities required by or undertaken pursuant to this Consent Order, or plans established thereunder, shall be available to DHES for inspection and copying upon notice to the Respondent as provided for herein.

C. Respondent may not assert a confidentiality claim for any data, including raw data, collected pursuant to this Consent Order. Respondent may assert a confidentiality claim for any documents which use or interpret such data.

D. Documents withheld from disclosure under terms of this Consent Order allowing withholding of privileged or confidential documents or documents otherwise exempt from disclosure by law, shall be identified for the other Party, by author, recipient, date of generation, general subject matter and basis for withholding,

at the time those documents would otherwise have been required to be produced or disclosed.

E. Additional Data shall be made available by DHES and Respondent for consideration and inclusion in the RI/FS, as follows:

1. Additional Data, for purposes of this Section XVIII.E, shall mean all quantitative analyses of samples, or other objective measurements, indicating the characteristics or quantities of air, water, soil, sediment or biota at a particular time at a particular location which (1) characterize stream water quality, stream aquatic resources, stream sediment characteristics, sediment transport characteristics, groundwater hydraulics and quality, tailings and contaminated soils characteristics, locations, and volumes, and railroad bed characteristics, within the Streamside Tailings Operable Unit, and (2) are collected by or for DHES or Respondent in addition to the data generated pursuant to the Work Plan, including data on the specified characteristics collected in connection with natural resource damage assessments or actions.

2. Additional Data collected prior to February 15, 1992, by or for DHES or Respondent which have not been made available to the other Party shall be identified in writing to the Project Coordinators on that date. Additional Data collected after February 15, 1992, shall be identified in writing to the Project Coordinators within 90 days of the sampling event. Additional Data for which results have been received prior to February 15, 1992, shall be provided to the Project Coordinators by March 1, 1992. Subsequent Additional Data shall be provided within 45 days of validation. A Project Coordinator may request and the Party shall provide, within 45 days of the request, raw data results or data validation information for Additional Data at any time after data results or data validation information are available. If a data summary report is to be prepared for the Additional Data, a Project Coordinator may request and the Party shall provide a copy of the data summary report upon its availability.

3. Upon agreement of the Parties, Additional Data may be considered "final data" for the RI/FS or otherwise usable in accordance with Section XIX on Admissibility of Data; provided, however, that the waiver by ARCO, in Section XIX.B, of rights to object to expenditures of funds to replace data not stipulated to shall not apply to data that is Additional Data and which is not data required to be collected under this Consent Order. Failure to agree upon use of Additional Data for the RI/FS shall not constitute an admission or acknowledgement of the validity or authenticity, or the lack thereof, of such data in litigation between the Parties regarding natural resource damages.

4. A Party's analysis or interpretation of data is beyond the scope of documents to be produced under this Section XVIII.E. Whether data is or is not Additional Data, as defined in this Section, shall be subject to dispute resolution in accordance with the provisions of Section XXI.

5. Each Party shall provide the other with a letter describing any Additional Data it intends to collect in 1992 at least 14 days before the annual meeting that is to be held no later than March 15, 1992. In these letters the Parties shall represent in good faith their intentions as to the Additional Data to be collected in 1992. However, these letters are not intended to bind or restrict either Party from collecting such data as it determines appropriate in 1992 or subsequent periods. In the event either Party later decides to contract the scope of its data collection as outlined in such letter, such Party shall, within 30 Days of such decision, notify in writing the other Party of such decision with a description of such change.

6. DHES and Respondent agree to advise the court in State of Montana v. Atlantic Richfield Company, in the U.S. District Court for the District of Montana, Case No. CV 83-317-HLN-CCL, of this agreement for mutual exchange of data, either through a status report or other mutually agreeable correspondence.

7. This agreement of the Parties to exchange Additional Data shall not constitute a waiver of any privilege or right, under applicable law, not to disclose other data or information which is not Additional Data, as defined in Section XVIII.E.1, above. Moreover, this agreement does not in any way alter the Parties' rights to pursue or obligations to respond to discovery in any litigation, including State of Montana v. Atlantic Richfield Company.

#### XIX. ADMISSIBILITY OF DATA

A. Except for objections as to relevance, the Parties hereby stipulate to and waive any objection to the admissibility into evidence of the results of any final data generated by the Respondent in the performance of the requirements of this Consent Order. For purposes of this Section, the term "final data" shall be interpreted to mean only analytical data that have been verified and approved by DHES, or verified by the Respondent and approved by DHES, pursuant to the QAPP and the data assessment and data validation plans as being in full compliance with the quality assurance/quality control ("QA/QC") requirements of the QAPP, LAP, and SAPs in effect at the time the samples were collected. Additionally, except for objections as to relevance, the Parties stipulate to and waive any objection to the admissibility into evidence of final data contained in, or referenced in, reports generated by any of the Parties or their Contractors pursuant to this Consent Order.

B. If DHES determines that analytical data are still usable in the RI/FS (and supporting documents), for certain specific purposes, and QA/QC requirements that were in place at the time the data were gathered were not completely satisfied, or no QA/QC requirements existed, DHES shall identify such data in a written report which describes the acceptable uses for the data, including any limitations on such uses and the reasons why the data may be used for these purposes. DHES shall transmit the report to the Respondent with a request that the Respondent stipulate to and waive any objection as to the admissibility into evidence (with the reservation described above) of the data if offered by the State as evidence in any enforcement proceeding. The Respondent shall respond in writing no later than thirty (30) days following receipt of the report to each issue and data point discussed by DHES. The Respondent shall negotiate in good faith and, if agreement is reached, enter into a written stipulation and waiver concerning the data. If DHES and the Respondent do not agree to a written stipulation covering certain data, the Respondent waives its rights to object to expenditures of funds (either required of Respondent or made by DHES) necessary for the collection of new data to replace that which was not stipulated to; however, Respondent reserves any objections it may have as to the necessity or use of the data not stipulated to or the new data.

C. The Respondent may also submit a report to DHES identifying data that does not fully comply with QA/QC requirements, describing acceptable uses for the data, describing the reasons why it is still usable, and proposing a written stipulation and waiver of the right to raise evidentiary objections in any further enforcement proceeding by the State.

## XX. STIPULATED PENALTIES

A. In the event that the Respondent's completion of the tasks set forth in this Section and called for in the Work Plan is not timely according to the schedule in Attachment 2, and such delay is not excused by operation of Section XVII (Force Majeure) or if the Respondent violates the following provisions of this Consent Order, DHES may assess and Respondent shall pay, by tendering to DHES within ten (10) Days of the Respondent's receipt of a written demand for payment of such penalties, the sum(s) set forth below as stipulated penalties for each stipulated penalty event (i.e., violation, delay, refusal or failure). Stipulated penalties may be assessed for each Day during which such violation, delay, or failure occurs or continues. The demand shall specify the events giving rise to Respondent's asserted liability for stipulated penalties and the amount of such penalties.

1. For each Day of delay of the delivery of the draft and final sampling and analytical plans, the treatment technology scoping document, the Initial Alternatives Screening Document (IASD report), any treatability study work

plan, the draft data summary reports, any treatability study report, the preliminary draft RI/FS report, the final draft RI/FS report, the draft final RI/FS report, and the final RI/FS report, and for each Day of failure to address comments, make modifications, incorporate information, or identify changes in resubmitted deliverables as provided in Sections XI.C and XX.D:

	<u>Amount/Day</u>
Days 1-14	\$ 3,000.00
Days 15-30	\$ 6,000.00
31 or more Days	\$12,000.00

2. For failure to pay the uncontested portion of reimbursable costs on time as specified in Section XXII:

	<u>Amount/Day</u>
Days 1-14	\$ 1,000.00
Days 15-30	\$ 3,000.00
31 or more Days	\$ 6,000.00

3. For each instance of unintentional destruction of a document(s) in violation of Section XVIII (Respondent shall bear the burden of establishing that any destruction was unintentional) :

\$2,500 per instance

4. For each instance of willful destruction of a document under Section XVIII, or failure to comply with the agreement not to contest jurisdiction in Section VII:

\$20,000 per instance

B. DHES hereby finds that the provisions of this Section XX are designed to protect the public health, welfare, safety and environment by achieving a prompt, complete and efficient assessment of the nature and extent of contamination, and the development of a plan for remediation of contamination at the Facility. Stipulated penalties are also integral and essential to DHES's desire that the provisions of this Consent Order be, to the maximum extent achievable, self-executing and self-enforcing. All stipulated penalties not specifically rejected by the dispute resolution process shall be paid on or before the tenth (10th) Day following final resolution of the dispute pursuant to Section XXI of this Consent Order.

C. DHES may, in its discretion, impose a lesser penalty for minor violations. Any such decision to reduce stipulated penalties otherwise due pursuant to Section XX.A of this Consent Order shall be solely at the discretion of DHES and shall not be subject to dispute resolution.

D. Stipulated penalties shall begin to accrue as of the date of receipt by Respondent of written notice from DHES specifying the violation of the Consent Order requirement and specifying the applicable penalty provision, provided, however, that prior to imposition of a stipulated penalty for failure to address comments, make modifications, or incorporate information in a resubmitted deliverable, as provided in paragraph 1 of this Section, DHES shall, following the completion of the activities described in Section XI.C, provide notice to Respondent of its determination of the occurrence of such stipulated penalty event and shall specify the failure(s) that constitutes the basis of that determination. If Respondent has not cured the identified defect or failure within five business days of receipt of such notification, stipulated penalties shall begin to accrue upon expiration of that five day period.

E. The check for payment of the stipulated penalties shall be mailed within ten (10) Days of Respondent's receipt of a written demand for payment. Payment of stipulated penalties to DHES pursuant to this Section XX shall be by check, made payable to the order of "State of Montana, Department of Health and Environmental Sciences" and shall contain a notation that it is for stipulated penalties for the Streamside Tailings Operable Unit. The check should be tendered to:

Centralized Services Division  
Department of Health and Environmental Sciences  
Cogswell Building, Room C123  
Helena, MT 59620

A copy of the transmittal letter and check shall be sent to the following address:

William B. Kirley, Esq.  
MDHES, Legal Division  
Cogswell Building  
Helena, MT 59620

F. If Respondent fails or refuses to comply with the requirements and schedules of this Consent Order, DHES may pursue any other remedy or sanction which may be available to DHES because of the Respondent's failure or refusal to comply with any of the terms of this Consent Order, including, without limitation, statutory penalties or injunctive relief to enforce the terms of this Consent Order.

G. Delay caused by formal dispute resolution requested by Respondent under Section XXI in which DHES prevails shall not constitute "a circumstance beyond the control of the Respondent" for purposes of being excused from payment of stipulated penalties under Section XVII (Force Majeure).



H. With respect to stipulated penalties, DHES shall have the burden of proving non-compliance, except as specified in Section XX.A.3, and the Respondent shall have the burden of proving the occurrence of a force majeure event.

#### XXI. DISPUTE RESOLUTION

A. In the event of any dispute pertaining to any of the requirements of this Consent order, including the Work Plan and any Supplemental Work Plans, the Parties shall initiate an informal dispute resolution period not to exceed ten (10) Days. During this time period, representatives of DHES and the Respondent shall meet informally to make a good faith attempt to resolve the dispute. At the conclusion of the informal dispute resolution process, DHES shall immediately notify the Respondent orally of its decision. The conclusion of the informal dispute resolution process shall be documented by DHES, and a notice shall be sent to Respondent within three (3) business days of the documented conclusion. Any agreement between the Parties resolving a dispute shall be in writing and made a part of the administrative record. It is understood that neither the Administrator of the Environmental Sciences Division nor the Director of the Department of Health and Environmental Sciences will be present at these meetings.

B. In the event the dispute cannot be resolved through this informal process, the Respondent may submit, on or before the tenth (10th) Day after conclusion of the informal dispute resolution process, a notice describing the nature of the dispute to the Administrator of the Environmental Sciences Division. This notice shall include all arguments and authority, both statutory and common law, and other facts and conclusions upon which the Respondent relies in support of its position.

C. Any dispute or argument in support of a dispute not submitted to the Administrator of the Environmental Sciences Division within this ten-Day period shall be waived.

D. Within ten (10) Days following receipt of the aforementioned notice to DHES, the Administrator of the Environmental Sciences Division shall schedule and hold an informal hearing addressing the subject matter of the dispute. The Administrator of the Environmental Sciences Division or his duly designated representative shall attempt to schedule the informal hearing for a time which is convenient to the Parties. DHES shall notify in writing the Respondent of the time and place of the informal hearing. This hearing shall take place before the Administrator or his duly designated representative and shall be transcribed or recorded. At this informal hearing, all Parties may present their respective arguments and any evidence in support of their position. The Administrator of the Environmental Sciences Division or his duly designated representative shall then consider all arguments and all evidence submitted and shall render a written

decision upon the dispute within seven (7) Days of the informal hearing.

E. In the event the Respondent does not agree with the decision of DHES, it may appeal, in writing within five (5) Days of its receipt of the decision, to the Director of the Department of Health and Environmental Sciences. At this time, the Respondent can request, and the Director may, in his discretion, schedule a meeting with the Respondent and representatives of DHES, at which time all Parties may make an oral presentation of their respective positions. It is to be understood, however, that this meeting is to be scheduled solely at the discretion of the Director, and nothing in this Section entitles the Respondent to such a meeting as a matter of right. Only those arguments and positions originally presented at the informal hearing before the Administrator will be considered at this appeal stage. The Director shall render a written decision within seven (7) Days of the appeal following receipt of the request from the Respondent. In the event the Director decides to hold a meeting as provided above, the period for rendering a written decision may be extended for an additional seven (7) Days; however, no stipulated penalties shall accrue during that period. The decision of the Director shall be final and shall become part of the Administrative Record.

F. In the event the Administrator or his duly designated representative fails to render a written decision within the time period stated in paragraph XXI.D or the Director fails to render a written decision within the time period stated in paragraph XXI.E, stipulated penalties shall be tolled for each Day that such written decision is delayed.

G. Any stipulated penalties which arise out of or are the subject of the dispute resolution shall accrue during the dispute resolution period, unless tolled by paragraph XXI.E or XXI.F. In the event this process ends in favor of the Respondent, no stipulated penalties shall be due for that particular violation. In the event this process ends in favor of DHES, all penalties shall be immediately due and owing and shall be paid by Respondent in accord with the procedures set forth in paragraph XX.E, unless DHES finds that the Respondent's position was substantially justified. If it is found that the Respondent's position was substantially justified or that the Respondent acted in good faith in advancing an event as a force majeure, then DHES may forgive part or all of the stipulated penalties incurred. Such a decision shall be solely at the discretion of the Director.

H. In the event the dispute resolution process ends in favor of DHES, the Respondent understands and agrees to reimburse DHES for all costs incurred by DHES because of the utilization of this resolution process. These costs shall include but are not limited to costs incurred by the State through the utilization of their own employees, attorneys, laboratories or scientific studies.

I. The Respondent may not challenge provisions of this Consent Order to which it has already agreed by resorting to these dispute resolution procedures, except that a good faith dispute as to interpretation of the Consent Order shall be subject to such procedures. Implementation of these dispute resolution procedures shall not provide the basis for any schedule extension for any activities required in this Consent Order unless DHES agrees in writing to a scheduled extension.

J. The Director of the Department of Health and Environmental Sciences shall have authority to suspend these dispute resolution procedures for activities at the Streamside Tailings Operable Unit during any period in which an immediate action is required to prevent an imminent and substantial threat to public health, welfare or the environment. In the event of such a suspension, any stipulated penalties otherwise accruing shall be tolled until Respondent's receipt of notification of resumption of the dispute resolution process.

#### XXII. REIMBURSEMENT OF COSTS

A. The Respondent agrees to and shall reimburse DHES for remedial action costs incurred by the State or its contractors after the effective date of this Consent Order and for all the Streambank Tailings and Revegetation Studies ("STARS") work (as provided in paragraph D below) which are consistent with the scope of DHES's role and responsibilities under this Consent Order and which are not inconsistent with the NCP. After the end of each calendar quarter during which this Consent Order is in effect, DHES may submit an accounting, including all applicable documentation, to the Respondent covering these remedial action costs, not covered by EPA funding, incurred by the State in connection with, or arising out of, its response to Releases or threatened Releases from the Facility after the effective date of this Consent Order. However, DHES agrees not to seek, solely on the basis of this Consent Order, cost recovery for implementation of a remedy, as defined by CERCLA Section 101(24), 42 U.S.C. § 9601(24). DHES's accounting shall itemize State costs incurred subsequent to the effective date of this Consent Order which have not been covered by funding provided by the EPA through a cooperative agreement, and shall include, at a minimum, the following information: the names, titles, and hourly rates of State employees and retained legal counsel, direct labor and other direct charges; indirect charges; and State contractor vouchers and/or invoices for Work performed for State activities and oversight related to implementation of this Consent Order, except for any privileged information contained in such vouchers or invoices.

B. Within thirty (30) Days of receipt of documentation from DHES, the Respondent shall, subject to its right to invoke the provisions in Section XXII.E, reimburse DHES for all such costs which are not inconsistent with the NCP which have not been covered by funding provided by the EPA through a cooperative agreement.

C. Payment to DHES for its costs described in Section XXII.A. shall be by check and shall include a notation that the amount is a contribution to the Environmental Quality Protection Fund. The check shall be made payable to "State of Montana, Department of Health and Environmental Sciences" and shall be tendered to: Centralized Services Division, Montana Department of Health and Environmental Sciences, Cogswell Building, Room C123, Helena, Montana 59620. The contributions should be identified as being for the Streamside Tailings Operable Unit. Copies of all payments to DHES shall be provided at the time of such payment to: William B. Kirley, Esq., MDHES, Legal Division, Cogswell Building, Helena, Montana 59620.

D. The Parties agree to negotiate in good faith for an agreement for reimbursement and provision of funds by Respondent for STARS work to be conducted by or for DHES. Any such agreement between the Parties shall be included and incorporated into this Consent Order.

E. If the Respondent concludes that DHES has made an accounting error, has not included the documentation described in paragraph A. above, or has included remedial action costs that are not recoverable under this Consent Order, it may contest payment by notifying DHES of these conclusions, together with the facts and arguments upon which Respondent relies to support its conclusions, in writing within thirty (30) Days of receipt of the accounting. Any objection to the State's remedial action costs or supporting argument not made within that time is waived. Following receipt of the Respondent's objections and supporting arguments, DHES and the Respondent shall then have thirty (30) Days to resolve their differences. If agreement cannot be reached within the 30-Day period, the State reserves all rights it has to bring an action against Respondent under applicable federal or state law, to recoup all recoverable costs as set forth in the accounting, together with allowable interest and damages and penalties, not reimbursed by the Respondent. Respondent reserves its right to contest all such claims.

F. If the Respondent contests payment of any of the State's remedial action costs included within an accounting submitted pursuant to paragraph A. of this Section XXII and such costs are subsequently found to be due and owing DHES, the Respondent may be liable to DHES for damages in an amount of two (2) times the amount of the remedial action costs in dispute, plus two (2) times the costs incurred in bringing such suit, including attorneys' and expert witness fees and expenses.

G. The State reserves all rights it has to recover all past remedial action costs and any future costs incurred by the State in connection with investigation, remedial or response activities at the Facility pursuant to applicable federal and state law (including state common law).

H. For purposes of paragraphs A. through F., inclusive, of this Section XXII, the term "remedial action costs" shall include:

1. all costs of all activities included within the definitions of the terms "removal," "remedial action," and "response" in CERCLA Sections 101(23), (24) and (25), respectively, 42 U.S.C. §§ 9601(23), (24) and (25), which are consistent with the NCP; and

2. all costs that fall within the definition of remedial action costs as defined in § 75-10-701(15), MCA, which are consistent with the NCP.

### XXIII. RESERVATION OF RIGHTS

A. The State reserves the right to conduct other investigations and activities at the Facility. Subject to Section XXXI, nothing herein shall preclude the State from undertaking any additional enforcement action it may deem necessary for any purpose, including the prevention or abatement of an imminent and substantial danger to health, welfare or the environment arising from site conditions. The State further retains all rights against Parties not privy to this Consent Order which may arise out of the facts on which this Consent Order is based. Notwithstanding compliance with the terms of this Consent Order, the Respondent is not released from liability for any actions for which the Respondent is otherwise liable under law.

B. DHES reserves the right to take appropriate enforcement action, including the right to seek injunctive relief, monetary penalties, and all other appropriate relief available, pursuant to all applicable federal or state statutory and common law, for any violation, failure, or refusal to comply with this Consent Order. In addition, if the Respondent fails to remedy noncompliance with this Consent Order in a timely manner, DHES may, after notification to the Respondent, initiate State-funded response actions and may subsequently pursue cost recovery against Respondent, including actions for punitive damages.

C. Nothing herein shall be construed to release the Respondent from any liability for failure of the Respondent to perform the required activities in accordance with the requirements of this Consent Order, the Work Plan and Supplemental Work Plans. The Parties further expressly recognize that this Consent Order and the successful completion of activities required by this Consent Order and plans established thereunder does not represent satisfaction, waiver, release of, or covenant not to sue (except as provided in Section XXXI) with regard to any claim of the State of Montana against the Respondent relating to the Facility (including, without limitation, claims to require the Respondent to undertake further response actions, claims to seek reimbursement of response costs not reimbursed under the terms of this Consent Order, and claims for natural resource damages).

D. Respondent retains all rights to claim contribution as permitted by CECRA and CERCLA against any person. Nothing in this Consent Order is intended to create any private causes of action in favor of any person not a Respondent.

E. Respondent denies any and all legal or equitable liability under any federal or state statute, regulation, ordinance or common law for any response costs, damages or other liability caused by or arising out of conditions at or arising from the Facility except as agreed to in Section VII. Except as provided in paragraph VII.A., XX.A., XXI.I., and this paragraph, Respondent specifically denies all Findings of Fact, Conclusions of Law and Determinations or any other allegations contained in this Consent Order and attachments thereto and such allegations, findings, conclusions of law and determinations shall not be used in any other proceeding by the State, other than proceedings to enforce this Consent Order or proceedings to recover State remedial action costs if Respondent fails to perform this Consent Order. This Consent Order shall not create in any third party any rights which would not otherwise exist; nor shall this Order be relied upon by third parties to assert a cause of action or claim against Respondent. Nothing in this Consent Order shall preclude, however, the Respondent from using this Consent Order, or the fact of its entry, against any person for contribution or for recovery of costs expended in complying with this Consent Order, except as specifically waived in this Consent Order.

F. No payment made by Respondent to pay for and implement the Work or any other activities required under this Consent Order, other than payment of stipulated penalties, shall be deemed to be a fine, penalty, or monetary sanction.

#### XXIV. PUBLIC COMMENT AND COMMUNITY RELATIONS

A. Within ten (10) Days of the date of signature of this Consent Order by the Respondent, DHES shall announce the availability of this Consent Order to the public for review and comment. DHES shall accept comments from the public for a minimum of thirty (30) Days after such announcement. At the end of the comment period, DHES, in consultation with EPA, shall review all such comments and shall either:

1. determine that this Consent Order should be made effective in its present form, in which case the Respondent shall be so notified in writing; or

2. determine that modification of this Consent Order is necessary, in which case the Respondent will be informed in writing as to the nature of all changes deemed necessary by DHES. If the Respondent agrees to the modifications, the Consent Order shall be so modified. In the event that the Respondent does not agree to modifications required by DHES

as a result of public comment, the dispute as to the modification shall be submitted to the Director of the Department of Health and Environmental Sciences. However, no modification to this Consent Order shall be made except by agreement of the Parties. In the event that the Respondent does not agree to modifications required by DHES, this Consent Order shall be null and void.

B. The Respondent shall cooperate with DHES in providing feasibility study information to the public. Upon the reasonable request of DHES, the Respondent shall participate in the preparation of all appropriate information disseminated to the public and in public meetings which may be held or sponsored by DHES to explain activities at the Streamside Tailings Operable Unit or the Silver Bow Creek Site.

#### XXV. INDEMNIFICATION

A. The Respondent agrees to indemnify and save and hold harmless the State of Montana, its agencies, departments and employees acting in their capacity as regulatory agencies overseeing actions required by this Consent Order from any and all claims or causes of action arising from, or on account of, acts or omissions of the Respondent, its agents, or assigns, in carrying out the activities performed pursuant to this Consent Order, provided that such claims or causes of action did not also arise from the negligence or wrongful acts of the State of Montana, its agents, departments, or employees. Notwithstanding the preceding sentence, Respondent agrees to indemnify and save and hold harmless the State of Montana, its agencies, departments and employees acting in their capacity as regulatory agencies overseeing actions required by this Consent Order from any and all claims or causes of action arising from or on account of actions of the State in obtaining access to property owned by third parties pursuant to paragraph XIII.D. of this Consent Order.

B. For purposes of this Section only, the phrase "claims or causes of action" shall be deemed to include, but not be limited to all claims of officers, agents, and employees of the State for personal injury or property damage.

#### XXVI. DISCLAIMERS

No Party shall be held as a party to any contract entered into by another Party or its employees, agents, or contractors in carrying out activities pursuant to this Consent Order. In addition, no Party shall be liable for any injuries or damages to persons or property resulting from acts or omissions of another Party or its employees, agents or contractors in carrying out the activities pursuant to this Consent Order.

XXVII. NOTICE OF RIGHT TO CLAIM CONFIDENTIALITY  
OF BUSINESS INFORMATION

The Respondent may, if it desires, assert a business confidentiality privilege covering part or all of the information requested by this Consent Order by obtaining a declaratory judgment from a court of competent jurisdiction or label the information as confidential pursuant to § 75-10-707(8), MCA, or Rule 16.44.1008 of the Administrative Rules of Montana. A label of confidentiality is subject to acceptance by DHES. If no such designation or judgment accompanies the information when it is received by DHES, DHES may make it available to the public without further notice to the Respondent. This provision shall not limit any other claims of privilege by Respondent with respect to documents or information exempt from disclosure by law.

XXVIII. ADMINISTRATIVE RECORD

A. DHES shall assist EPA in maintaining the administrative record for the Streamside Tailings RI/FS, including documents generated as a result of this Consent Order, and the Respondent agrees to cooperate with DHES and EPA in the preparation of the administrative record. DHES, in consultation with EPA, has determined that the administrative record shall include, but not be limited to, all documents and data submitted by the Respondent pursuant to this Consent Order, all correspondence between DHES and the Respondent relating to implementation of this Consent Order, and all documents described in EPA's Administrative Record Guidance (Attachment 3). The administrative record shall also include, but not be limited to, all correspondence between EPA and DHES as provided under CERCLA, the NCP, and applicable EPA guidance.

B. Notwithstanding the preceding sentence, DHES and EPA reserve the right to protect from disclosure to the Respondent and the public any documents and communications claimed by DHES or EPA to be privileged under applicable federal and State law. A list of confidential documents included in the administrative record shall be maintained in the administrative record available to the public.

XXIX. SUBSEQUENT MODIFICATION AND EFFECTIVE DATE

This Consent Order may be amended by the mutual agreement of DHES, in consultation with EPA, and the Respondent. Such amendments shall be in writing and shall be effective as of the date the amendment is signed by DHES.

In the event DHES, in consultation with EPA, determines that this Consent Order should be made effective in its present form following public comment, the effective date shall be the date on which Respondent receives written notice pursuant to Section XXIV. In the event that this Consent Order is modified by agreement of DHES and the Respondent following public comment, the effective



date of such modified Consent Order shall be the date on which it is signed by DHES.

#### XXX. CONTRIBUTION PROTECTION

The Respondent shall not be liable to other persons or entities for contribution claims regarding the Work required by or costs covered by this Consent Order, pursuant to Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2) and § 75-10-719(1), MCA.

#### XXXI. COVENANT NOT TO SUE

So long as Respondent is performing the Work required by this Consent Order and is in compliance with the terms of this Consent Order, DHES covenants not to sue, issue any order or take other administrative or judicial action, or assert any claim against Respondent with respect to the Work. Such covenant not to sue will only apply during the performance of the requirements of this Consent Order. However, nothing in this section, or in this Consent Order, shall limit the State's ability to respond to an imminent and substantial endangerment to public health, welfare, safety or the environment.

#### XXXII. TERMINATION AND SATISFACTION

This Consent Order shall terminate when the Respondent certifies that all activities required under this Consent Order have been performed (the "Certification"), and DHES, in consultation with EPA, has accepted the Certification. DHES shall accept or reject the Certification by the Respondent within six (6) months of submittal of the Certification of the Respondent. Sections VII, XVIII, XIX, XXII, XXIII, XXV, XXVI, XXX and this Section shall survive termination of this Consent Order. If DHES accepts the Certification, Respondent shall not be liable for any additional investigation of the Facility unless, subsequent to the Certification:

1. conditions at the Facility, previously unknown to DHES, are discovered; or

2. new information is received by DHES, in whole or in part, and DHES, based upon these previously unknown conditions or this new information determines that the Remedial Investigation/Feasibility Study is not adequate to choose a remedy which is protective of public health, welfare or safety, or the environment. In the event such a determination is made by DHES, a written opinion shall be prepared by DHES which sets forth all factual information, analytical data and previously unknown conditions upon which DHES may rely in determining that the RI/FS is not adequate. The written opinion shall be made part of the administrative record. This Section XXXII shall in no way affect the right of the State to respond to an imminent and substantial endangerment to public health, welfare, safety or the environment.

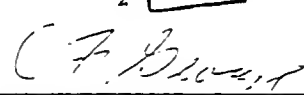
XXXIII. AUTHORITY OF SIGNATORIES

Each of the signatories of this Consent Order states that he or she is fully authorized to enter into the terms and conditions of this Consent Order and to bind legally the Party represented by him or her to the Consent Order.

IT IS SO AGREED:

9/26/91  
Date

ARCO

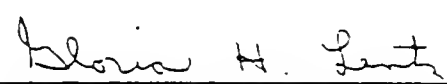
  
\_\_\_\_\_  
C. F. George  
Manager  
Rocky Mountain Environmental  
Remediation  
ARCO  
On behalf of the Atlantic  
Richfield Company

STATE OF Colorado )  
COUNTY OF Denver ) ss.

Before me appeared C. F. George on behalf of ARCO, this 30th day of September 1991, who states and acknowledges that he is an authorized officer of the company and has authority to sign the foregoing Administrative Order on Consent on behalf of ARCO, and does so of his own free will.

WITNESS my hand and official seal.

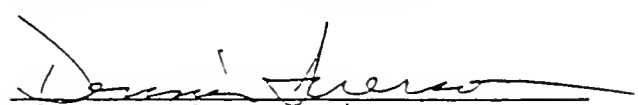
(Notarial Seal)

  
\_\_\_\_\_  
Notary Public  
Residing at: 10208 E. Jewell Ave., Denver,  
My commission expires: 7/15/91 CO

IT IS SO ORDERED:

9-27-91  
Date

STATE OF MONTANA  
DEPARTMENT OF HEALTH AND  
ENVIRONMENTAL SCIENCES

  
\_\_\_\_\_  
DENNIS IVERSON, Director  
Department of Health and  
Environmental Sciences

Attachment 1

Attachment 1 (the Work Plan) is bound in a separate volume.

STREAMSIDE TAILINGS RI/FS SCHEDULE

Activity	Schedule <sup>(a)</sup>
ARCO conducts Spring, 1991 surface water sampling	May, June 1991
ARCO submits Draft Quality Assurance Project Plan (QAPP), Draft Data Validation/Data Management Plan (DVDMP), and ARCO Comprehensive Safety and Health Program Manual	90 days after ARCO receipt of Special Notice Letter, or at the time of the Good Faith Offer, whichever is later.
ARCO submits Draft Work Plan	60 days after ARCO receipt of Special Notice Letter, or at the time of the Good Faith Offer, whichever is later
[MDHES provides Comments on the Draft Work Plan]	[15 days after receipt of the Draft Work Plan from ARCO]
ARCO submits Final Work Plan	15 days after receipt of MDHES comments on the Draft Work Plan, or at the time that ARCO signs the Administrative Order on Consent (AO), whichever is later
ARCO submits Draft 1991 Sampling and Analysis Plans (SAPs) and Cultural Resources Assessment Plan	90 days after ARCO receipt of Special Notice Letter, 30 days after the Good Faith Offer, or at the time that the AO is signed by ARCO, whichever is latest
Final Potentially Protected Resources (PPR) Report (Floodplains/Wetlands Assessment Report and the Threatened and Endangered Species Report), Draft Historical Data Assessment Report (HDAR)	90 days after ARCO receipt of Special Notice Letter, 30 days after ARCO Good Faith Offer, August 30, or at time the AO is signed by ARCO, whichever is latest
MDHES and Federal and State trustees comment on and approve PPR report	30 days after receipt
[MDHES reviews and submits comments to ARCO on draft LAP, QAPP, DVDMP, HDAR, and 1991 field program SAPs]	[30 days after receipt of ARCO submittals]
ARCO submits Response to Comments and Final LAP, QAPP, DVDMP, HDAR and 1991 field program SAPs, as necessary	21 days after receipt of MDHES comments

# STREAMSIDE TAILINGS RI/FS SCHEDULE (Continued)

Activity	Schedule <sup>(a)</sup>
[MDHES approves Final LAP, QAPP, DVDMP, HDAR, and 1991 field program SAPs, as necessary]	[15 days after receipt of final documents from ARCO]
[Public Comment Period on Work Plan and AO opens]	[Upon ARCO signature of the AO]
[Public Comment Period ends]	[30 days after the Public Comment Period opens]
[Effective Date of the AO (EDOAO) and Final Work Plan approval, and MDHES completes Responsiveness Summary]	[30 days after the close of the Public Comment Period, or at time of MDHES approval of 1991 SAPs]
ARCO begins 1991 field sampling program and submits Final Cultural Resources Report	15 days after MDHES approval of LAP, QAPP, DVDMP, HDAR, and 1991 SAPs; or 15 days after the EDOAO; or 5 days after review of the PPR report, whichever is latest
[MDHES and EPA provide Preliminary List of ARARs, chemical and location-specific]	[120 days after EDOAO]
ARCO submits ARARs Scoping Document	30 days after ARCO receipt of MDHES comments on the DOAR or 90 days after ARCO receipt of MDHES/EPA preliminary ARARs, whichever is later
ARCO submits Draft Annotated Outline of the Preliminary Site Characterization Information (PSCI) and Draft 1992 SAP	January 7, 1992
ARCO submits preliminary 1991 data and PSCI and Draft 1992 SAPs	February 15, 1992
[No MDHES response is expected for the preliminary data or PSCI]	
ARCO submits Draft Data Summary/Validation/Useability Reports (DSRs) for the 1991 field sampling program. [Note that the DSRs will correspond directly to the SAPs.]	30 days after completion of data assessment for the data represented by each 1991 SAP (Data assessment shall be completed within 45 days of ARCO receipt of final data packages from lab.)

# STREAMSIDE TAILINGS RI/FS SCHEDULE (Continued)

Activity	Schedule <sup>(a)</sup>
[MDHES provides Comments on the 1991 DSRs]	[30 days after receipt of 1991 DSRs]
ARCO submits Response to Comments and Final 1991 DSRs	21 days after receipt of MDHES comments on the 1991 DSRs
[MDHES approves Final 1991 DSRs]	[15 days after receipt of Final 1991 DSRs from ARCO]
1992 Annual Meeting	March 17, 1992
[MDHES reviews Draft 1992 SAP and provides comments to ARCO]	[30 days after receipt of the Draft 1992 SAP]
ARCO submits Response to Comments and the Final 1992 SAP	30 days after receipt of MDHES Comments on the Draft 1992 SAP
[MDHES approves Final 1992 SAPs]	[15 days after receipt of Final 1992 SAPs from ARCO]
ARCO starts 1992 field sampling program	15 days after MDHES approval of the 1992 Final SAPs, or as weather permits; whichever is later
Fall 1992 meeting to discuss 1992 sampling and assess any additional data needs in 1993, as practicable. The schedule for developing 1993 SAP, if necessary, to be agreed on based on prior season schedule.	No later than December 15, 1992
ARCO submits preliminary 1992 data and the 1992 PSCI	February 15, 1993, or 30 days before the 1993 Annual Meeting, whichever is earlier
[No MDHES comments are expected for this submittal]	
ARCO submits 1992 Draft DSRs	30 days after data assessment of the applicable 1992 data
[MDHES reviews and provides Comments on the 1992 Draft DSRs]	[30 days after receipt of the Draft DSRs from ARCO]

STREAMSIDE TAILINGS RI/FS SCHEDULE  
(Continued)

Activity	Schedule <sup>(a)</sup>
ARCO submits Response to Comments and Final 1992 DSRs [MDHES approves Final 1992 DSRs]	21 days after receipt of MDHES' Comments on the Draft DSRs [15 days after Receipt of Final 1992 DSRs]
1993 Annual Meeting	March 15, 1993, or 30 days after receipt of preliminary 1992 data and PSCI, whichever is earlier
ARCO submits Health and Environmental Risk Assessment Scoping Document	30 days after ARCO assessment of the 1992 data
ARCO submits Institutional Controls Legal Memorandum [MDHES provides the Attorney General's (AG) response on Institutional Controls Legal Memorandum, if possible.]	45 days after ARCO submittal of 1992 DSRs [90 days after receipt of the Institutional Controls Legal Memorandum]
ARCO submits examples of draft site-specific institutional controls legal instruments	120 days after receipt of the AG's and CA's Opinion on the Institutional Controls Legal Memorandum, or 60 days after ARCO submittal of the IASD, whichever is later
ARCO submits 1991-93 Demonstration Project Plan (DPP)	30 days after MDHES receipt of HDAR
ARCO submits Draft Treatment Technology Scoping Document (TTS) [MDHES provides Comments on the DPP and TTS]	Submit with DPP. [30 days after receipt of Draft DPP and TTS from ARCO]
ARCO submits Response to Comments and the Final DPP and TTS [MDHES approves Final DPP and TTS]	21 days after receipt of MDHES Comments [15 days after receipt of Final DPP and TTS from ARCO]

# STREAMSIDE TAILINGS RI/FS SCHEDULE (Continued)

Activity	Schedule <sup>(a)</sup>
ARCO starts Demonstration Project	15 days after approval of the Final DPP
ARCO submits Demonstration Project Report (DPR)	30 days after assessment of all demonstration project data and cost analyses, or August 31, 1993, whichever is earlier
[MDHES reviews and provides Comments to ARCO on the Draft DPR]	[30 days after receipt of the Draft DPR]
ARCO submits Response to Comments and Final DPR to MDHES	21 days after receipt of MDHES Comments
[MDHES approves Final DPR]	[15 days after receipt of Final DPR from ARCO]
[MDHES completion of the Streamside Tailings and Revegetation Study (STARS)]	[No later than MDHES approval of the Final DPR]
ARCO submits Draft Remedial Action Objectives Report (RAOR) and Draft Development of Alternatives Report (DOAR)	15 days after submittal of the 1991 PSCI and preliminary 1991 data
[MDHES provides comments on the Draft RAOR and DOAR]	[30 days after receipt of the Draft RAOR and DOAR, or 15 days after the 1992 Annual Meeting, whichever is later]
ARCO submits the Final RAOR and DOAR and Response to Comments	21 days after receipt of MDHES comments on the Draft RAOR and DOAR
[MDHES approves the Final RAOR and DOAR]	[15 days after receipt of the Final RAOR and DOAR from ARCO]



# STREAMSIDE TAILINGS RI/FS SCHEDULE (Continued)

Activity	Schedule <sup>(a)</sup>
ARCO submits the Draft Initial Alternatives Screening Document (IASD) and the Technical Memorandum - Waste Repository Siting Study	30 days after MDHES approval of the DPR, and 30 days after MDHES Final STARS report is provided to ARCO; 60 days after MDHES approval of the Final RAOR and DOAR; 30 days after ARCO receipt of AG's Response on Institutional Controls Legal Memorandum; 30 days after ARCO receipt of the Preliminary List of ARARs; or 30 days after MDHES receipt of the 1992 DSRs; whichever is latest
[MDHES reviews the IASD and provides Comments]	[45 days after receipt of Draft IASD]
ARCO provides Response to Comments and the Final IASD	30 days after receipt of MDHES Comments on the Draft IASD
[MDHES approves IASD]	[15 days after receipt of the Final IASD from ARCO]
[MDHES provides Final Risk Assessment (RA)]	[90 days after receipt of the Final 1992 (or Phase II RI) DSRs]
[MDHES/EPA provide Detailed Analysis of ARARs]	[60 days after MDHES receipt of the 1992 Draft (or Phase II RI) DSRs, or the Draft IASD, whichever is later]
ARCO submits Preliminary Draft RI/FS	30 days after MDHES approval of the Final DSR (Phase II DSR, if applicable); 30 days after MDHES approval of the Final IASD; 30 days after ARCO receipt of Detailed Analysis of ARARs; or 30 days after ARCO receipt of the Final RA, whichever is the latest
[MDHES reviews the Preliminary Draft RI/FS and provides ARCO comments]	[45 days after receipt of the Preliminary Draft RI/FS]
ARCO submits the Final (Public) Draft RI/FS and Response to MDHES Comments	30 days after receipt of MDHES comments on the Preliminary Draft RI/FS

STREAMSIDE TAILINGS RI/FS SCHEDULE  
(Continued)

Activity	Schedule <sup>(a)</sup>
[Public Comment Period]	[30 days]
[MDHES prepares Responsiveness Summary and Comments on the Final Draft RI/FS]	[30 days]
ARCO submits Draft Final RI/FS and Response to Comments, as appropriate	45 days after receipt of MDHES Comments on the Final Draft RI/FS
[MDHES provides Comments on the Draft Final RI/FS]	[30 days after MDHES receipt of Draft Final RI/FS]
ARCO submits Final RI/FS	30 days after receipt of MDHES Comments on the Draft Final RI/FS

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<sup>(a)</sup> The schedule date will be whichever date is later (latest) unless noted otherwise.

Attachment 3

GUIDANCE DOCUMENTS

U.S. EPA. March 8, 1990. 40 CFR Part 300. National Oil and Hazardous Substances Contingency Plan; Final Rule.

U.S. EPA. October 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA. Interim Final. OSWER Directive No. 9255.3-01.

U.S. EPA. December 1987. Compendium of Superfund Field Operations Methods. OSWER Directive 9355.0-14, EPA/540/P-87/00/a (also called Compendium).

U.S. EPA. August 1988. CERCLA Compliance with Other Laws Manual. Draft. OSWER Directive 9234.1-01.

U.S. EPA. August 1989. CERCLA Compliance with Other Laws Manual. Part 2. OSWER Directive 9234.1-02.

U.S. EPA. December 1988. Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites. OSWER Directive No. 9283/1-2.

U.S. EPA. September 1988. Technology Screening Guide for Treatment of CERCLA Soils and Sludges. EPA/540/2-88/004.

U.S. EPA. March 1987. Data Quality Objectives for Remedial Response Activities. OSWER Directives 9335.07A and 07B. (Also called DQO Guidance.) U.S. EPA, Washington, D.C.

U.S. EPA. April 1985. Characterization of Hazardous Waste Sites - A Methods Manual. Volume II. EPA/600/4-84/075.

U.S. EPA. December 1989. Risk Assessment Guidance for Superfund. Volume 1. Human Health Evaluation Manual. Part A. Interim Final. EPA/540/1-89/002.

U.S. EPA. March 1989. Risk Assessment Guidance for Superfund. Volume 2. Environmental Evaluation Manual. Interim Final. EPA/540/1-89/001.

U.S. EPA. April 1988. Superfund Exposure Assessment Manual. Draft. OSWER Directive 9285.5-01. U.S. EPA, Washington, D.C.

U.S. EPA. 1989 a. Exposure Factors Handbook. EPA/600/8-89/043.

U.S. EPA. September 1989. Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites. OSWER Directive No. 9355.4-02.

National Institute for Occupational Safety and Health. 1985. Guidance Manual for Superfund Activities. Volumes 1-5. U.S. Department of Health and Human Services, National Institute For Occupational Safety and Health, Cincinnati, Ohio.

NIOSH/OSHA/USCG/USEPA. 1985. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. U.S. DHHS.

U.S. EPA. August 1986. Applicability of RCRA Requirements to CERCLA Mining Waste Sites. OSWER Directive No. 9234.0-04.

U.S. EPA. August 1988. Superfund Analytical Data Review and Oversight. OSWER Directive No. 9240.0-03.

U.S. EPA. 1979. Methods for Chemical Analysis of Water and Wastes, EPA-600-4-79-02.

U.S. EPA. 1983. Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans (QAMs-005/80) EPA-600/4-83-004.

U.S. EPA. November 1986. Test Methods for Evaluating Solid Wastes, 3rd Ed. (SW-846).

Attachment 4

MODEL DISCLAIMER

ARCO submits the attached [name of report] with revisions to section(s) \_\_\_\_\_ on pages \_\_\_\_\_, which were made at the direction of DHES over ARCO's objections.

Attachment 5

Attachment 5 (the Quality Assurance Project Plan) will be incorporated as a separate volume when finalized.

Attachment 6

Attachment 6 (the Sampling and Analysis Plan) will be incorporated as a separate volume when finalized.

Attachment 7

ACCESS AGREEMENT

\_\_\_\_\_, ("Owner") and Atlantic Richfield Company ("ARCO") enter into this Access Agreement ("Agreement") this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_.

1. ARCO has entered into an Administrative Order on Consent with the State of Montana ("State"), to conduct a Remedial Investigation/Feasibility Study for the Streamside Tailings Operable Unit of the Silver Bow Creek/Butte Area Site.

2. Access to property owned by Owner as described in Exhibit A is needed to conduct certain work required by the Consent Order as described in Exhibit B.

3. Owner agrees to permit ARCO to conduct such work on Owner's property.

Therefore, in the mutual interest of Owner and ARCO in furthering the protection of public health and the environment, including the benefits to Owner's property,

Owner and ARCO further agree as follows:

1. GRANT OF ACCESS. Owner hereby grants to ARCO and the State, including the authorized representatives of each, the right to enter Owner's real property, as described in Exhibit A, which is attached hereto and incorporated herein by reference (the "Property"), to conduct activities required by the Consent Order, including without limitation, monitoring and sampling (or to receive split samples) of environmental media and conducting other information gathering activities such as field investigating, data collection, installation of monitoring wells and soil borings, surface water and groundwater sampling, surveys, testing, and periodic monitoring (collectively referred to as "Work") as further described in Exhibit B, which is attached hereto and incorporated herein by reference. Owner warrants and represents to ARCO that, to the best of Owner's knowledge, Owner possesses ownership interests in the Property sufficient to grant access to ARCO to conduct the Work. ARCO will make every reasonable effort to minimize any inconvenience to Owner during its Work on the Property, and will work closely with Owner to address any concerns Owner may have about the Work.

2. INDEMNIFICATION OF OWNER. ARCO agrees to indemnify and hold harmless Owner from any and all actions, claims, damages, losses, liabilities, or expenses, including damage to property or for loss of use of property, ("liabilities") which may be imposed on or incurred by Owner as a result of ARCO's negligent, reckless or willful acts or omissions while on the Property, except to the extent that such liabilities result from the acts or omissions of Owner. Provided that the Work is conducted without negligence by ARCO, Owner and ARCO agree that the Work conducted pursuant to this Agreement shall not give rise to a claim for indemnification under this provision.



3. COVENANT NOT TO SUE. Except for the indemnification as provided in Paragraph 2 of this Agreement, Owner covenants not to sue ARCO for, and hereby releases ARCO from, any liability for any actions, claims, damages, losses, expenses, or any other liabilities, including but not limited to damages to property or for loss of use of property, arising out of or related to the Work, provided that the Work is conducted without negligence by ARCO.

4. NOTICE. ARCO shall provide Owner, either in writing or verbally, with at least 24 hours notice prior to first commencing the Work on the Property.

All written notices pertaining to this Agreement shall be sent to Owner and ARCO at the respective addresses below. Either Owner or ARCO may designate a different address for receipt of notice by providing written notice of such change to the other.

TO ARCO: ARCO  
307 E. Park Avenue, Suite 301  
Anaconda, MT 59711

Attention: \_\_\_\_\_

TO OWNER: \_\_\_\_\_  
\_\_\_\_\_

5. RESTORATION OF PROPERTY. Upon completion of the Work, ARCO will use its best efforts to return the Property to the condition it was in at the time ARCO first entered the Property under this Agreement, provided such restoration is not inconsistent with the Work conducted pursuant to this Agreement.

6. SAMPLES. ARCO agrees to use its best efforts to provide, upon Owner's prior written request, a portion of any sample taken on Owner's Property provided that a sufficient quantity of the materials to be sampled are available on the day of sampling, and provided further that the sampling requirements of ARCO and the State are satisfied. Upon the request of Owner, ARCO shall provide Owner with the results of any sampling ARCO performs on the property, after compliance with required quality assurance procedures. A "SAMPLE REQUEST" form is attached as Exhibit C for Owner's use in requesting either: (1) a portion of any sample taken from the property; or (2) a report of the results of that sampling.

7. MISCELLANEOUS.

a. Effect of Agreement. This Agreement and the rights and obligations created hereby shall be binding upon and inure to the benefit of Owner and ARCO and their respective assigns and successors in interest.

b. Negation of Agency Relationship. This Agreement shall not be construed to create, either expressly or by implication, the relationship of agency or partnership between Owner and ARCO. Neither Owner nor ARCO is authorized to act on behalf of the other in any manner relating to the subject matter of this Agreement.

c. Termination. Except with respect to paragraphs 2, 3 and 7.a of this Agreement, this Agreement will terminate thirty (30) days following ARCO's written notification to Owner that the Work is complete.

d. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Montana.

e. Construction. The invalidating or unenforceability of any provision of this Agreement shall not affect the validity of enforceability of any other provision.

f. Entire Agreement. This Agreement embodies the entire agreement of Owner and ARCO with respect to the subject matter hereof, and no prior oral or written representation shall serve to modify or amend this Agreement. This Agreement may be modified only by a written agreement signed by Owner and ARCO.

IN WITNESS WHEREOF, Owner and ARCO have executed this Agreement effective as of the date first written above.

\_\_\_\_\_  
By: \_\_\_\_\_

Title: \_\_\_\_\_

ATLANTIC RICHFIELD COMPANY

By: \_\_\_\_\_

Title: \_\_\_\_\_

EXHIBIT C

SAMPLE REQUEST

I, the undersigned, am the owner, his legal representative, or otherwise control the Property (and water well, if applicable) described herein. I have granted access to ARCO, the State, and their respective representatives to enter the Property and to take samples of environmental media from the Property.

I hereby request that ARCO provide to me:

- (1) \_\_\_\_\_ a portion of any sample taken by ARCO from the Property;
- (2) \_\_\_\_\_ a report of the results of that sampling.

PLEASE CHECK ONE OR BOTH OF THE ABOVE.

I understand that, after a sample portion is provided to me, the handling, the storage and any analysis of that sample portion, or costs for the same, are my responsibility.

Signature of person making request (if made on behalf of another person or company, please identify that party also):

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name

The address at which the requesting party may be contacted and/or the sample portion delivered:

\_\_\_\_\_  
\_\_\_\_\_

PLEASE RETURN ONE EXECUTED ORIGINAL OF THIS ENTIRE ACCESS AGREEMENT, INCLUDING THIS SAMPLE REQUEST FORM, IN THE SELF-ADDRESSED, STAMPED ENVELOPE TO:

Atlantic Richfield Company, Attention: \_\_\_\_\_  
\_\_\_\_\_

C:\WP50\SDO\AGMTS\PSOILS.AGT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII, MONTANA OFFICE  
FEDERAL BUILDING, 301 S. PARK, DRAWER 10096  
HELENA, MONTANA 59626-0096

Ref: 8RCMO

October 8, 1991

**RECEIVED**

OCT 09 1991

William B. Kirley, Attorney  
State of Montana  
Department of Health and  
Environmental Sciences  
Cogswell Building  
Helena, Montana 59620

DHES LEGAL DIVISION

Re: Permit Exemption for RI/FS Activities at the Silver  
Bow Creek/Butte Area (original portion) Superfund  
Site, Streamside Tailings Operable Unit

Dear Mr. Kirley:

Section 121(e)(1) of CERCLA, 42 U.S.C. § 9621(e)(1), states that:

No Federal, State, or local permit shall be required for the  
portion of any removal or remedial action conducted entirely  
onsite, where such remedial action is selected and carried out in  
compliance with this section.

Pursuant to section 104(d) of CERCLA, 42 U.S.C. § 9604(D), the  
State of Montana received cooperative agreement money to require  
responsible parties to conduct remedial investigation and feasibility  
study (RI/FS) activities at the Streamside Tailings operable unit of  
the Silver Bow Creek/Butte Area (original portion) Superfund Site, near  
Butte, Montana. EPA has reviewed the administrative order on consent  
issued for this action, and the attached work plan describing the  
planned RI/FS work, and has approved of those documents.

Accordingly, by this letter, EPA invokes the section 121(e)(1)  
permit exemption for the Streamside Tailings operable unit RI/FS  
activities, as long as those activities are conducted in accordance  
with the approved consent order, work plan, and the National  
Contingency Plan, 40 CFR Part 300.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. Henry Elsen", is written over the typed name.

D. Henry Elsen  
Assistant Regional Counsel

cc: Neal Marsh, SHWB  
Mike Bishop, 8MO

Silver Bow Creek/Butte Area NPL Site

STREAMSIDE TAILINGS OPERABLE UNIT

RESPONSE TO PUBLIC COMMENTS ON  
DRAFT WORK PLAN AND ADMINISTRATIVE ORDER ON CONSENT

Montana Department of Health and Environmental Sciences

February 1992

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RESPONSE TO PUBLIC COMMENTS ON  
DRAFT WORK PLAN AND ADMINISTRATIVE ORDER ON CONSENT  
  
STREAMSIDE TAILINGS OPERABLE UNIT

Six public comment letters were received by MDHES during the comment period on the Streamside Tailings draft Work Plan and Administrative Order on Consent. Oral testimony was presented by four individuals at the public comment meeting in Ramsay on August 13, 1991. Several commenters, in both written and oral statements, presented multiple comments. MDHES has responded to each comment separately.

The responses to written comments are provided in Section 1.0. Comment letters are identified by number with the prefix "1". The responses to oral comments are provided in Section 2.0. Oral comments are identified by number with the prefix "2". Where multiple comments are found in a specific letter or testimony, each comment is identified by a suffix letter. For example, the third comment in Letter No. 4 is identified as Comment 1.4.C.

Copies of the comment letters and oral comment transcript are included in Section 3.0

## 1.0 PUBLIC COMMENT LETTERS

### 1.1 Comment Letter No. 1, Don R. Stoecker

Comment 1.1.A notes that sloping back tailings from the streambank with revegetation appears to be the best remedy unless removal of the metals from the tailings proves feasible.

Response 1.1.A. This is one set of alternatives that will be evaluated during one of the demonstration projects and in the feasibility study portion of the RI/FS.

Comment 1.1.B suggests that the RI/FS investigate historical wetlands to determine whether they were formed by reduced creek gradient or by groundwater seepage, and whether there were potential contaminant source areas associated with any seepage.

Response 1.1.B. The investigation in the RI/FS of the shallow aquifers near Silver Bow Creek should be sufficient to determine both the hydraulic and water-quality characteristics of those aquifers near historical wetlands. One of the specific goals of the RI/FS is to evaluate Silver Bow Creek surface water/groundwater interconnections, such as at wetland areas.

Comment 1.1.C recommends testing the soils of Whiskey, Brown's, and German Gulches for mercury.

Response 1.1.C. MDHES has determined that soils investigations under this RI/FS will be limited to the vicinity of Silver Bow Creek. We do intend to analyze soils samples taken near known historic placer operations for mercury and analyze surface water samples of the tributary streams for mercury. Please see Response 1.5.C to Comment Letter No. 5.

Comment 1.1.D recommends consideration of an earlier suggestion at the Anaconda public meeting to hydraulically wash tailings out of the Silver Bow Creek canyon into the Warm Springs Ponds.

Response 1.1.D. This alternative will be considered during the evaluation of alternatives.

Comment 1.1.E expresses concern over potential contamination of aquifers underlying Rocker and Ramsay from the contaminated Butte aquifers, noting that restricting groundwater use with institutional controls would not be an appropriate solution and recommending other potential sources of noncontaminated water.

Response 1.1.E. These are issues that will be addressed during the evaluation of alternatives and the determination



of applicable or relevant and appropriate requirements (ARARs) for the operable unit. MDHES has no information to date indicating that Butte contaminated groundwater has migrated into the Rocker and Ramsay areas. The groundwater monitoring included in the Streamside Tailings RI/FS will investigate potential groundwater contamination. The Work Plan has been revised to include one alluvial monitoring well, during Phase I, at the upper end of the operable unit to detect any contaminant migration from the Butte aquifers. Additional wells may be required during Phase II. See also Response 2.2 to Public Oral Comment No. 2.

## 1.2 Comment Letter No. 2, Tony Schoonen

Comment 1.2.A notes concern over potential contamination of local aquifers from the Butte area sources and the Ramsay Flats, as well as any new industries and agricultural usage.

Response 1.2.A. No information available to date indicates contamination of deeper aquifers in the operable unit from sources in Butte or the Ramsay Flats. Existing and newly-installed monitoring wells will be monitored during the RI/FS to gain a more thorough understanding of the groundwater hydraulics and quality in the operable unit. See also Response 1.1.E to Comment Letter No. 1 and Response 2.2 to Public Oral Comment No. 2.

Comment 1.2.B recommends that wetlands treatment approaches be used along Silver Bow Creek to benefit fish and wildlife as well as improve water quality. The comment further recommends that the selected remediation maintain maximum instream flows in Silver Bow Creek to dilute the contamination, and that those flows should take precedence over downstream irrigation uses.

Response 1.2.B. These issues will be addressed during the evaluation of alternatives portion of the RI/FS. The cleanup requirements will be set by MDHES in the Record of Decision. The degree to which various alternatives meet desired water quality goals will be evaluated in the feasibility study, along with other considerations, such as the short- and long-term effectiveness, implementability, and cost of each alternative. Water rights will be considered during the evaluation of alternatives. The RI/FS Work Plan has been modified to include collection of information about existing use rights to Silver Bow Creek water and identification of any constraints that those rights may place on potential remediation alternatives.

### 1.3 Comment Letter No. 3, Dick Hafer

Comment 1.3 recommends that future remediation alternatives for Silver Bow Creek do not include diversion, impoundment, or impendence of waters subject to existing agricultural water rights.

Response 1.3. Information concerning existing rights to Silver Bow Creek waters will be collected during the RI/FS. Those rights will be considered during the evaluation of alternatives for the operable unit. However, it would be premature at this time to preclude reasonable alternatives from evaluation in the feasibility study.

### 1.4 Comment Letter No. 4, Ronald Kelley

Comment 1.4.A recommends that the investigation include study of existing water rights in the Silver Bow Creek and upper Deer Lodge Valley areas. The comment further recommends that water users be contacted for their input on the study, and that they be compensated if Silver Bow Creek remediation adversely affects their water rights.

Response 1.4.A. Existing water rights and the potential for those rights to be affected by Silver Bow Creek remediation will be investigated during the RI/FS. Any necessary compensation for affected water rights will be considered during the evaluation of the relative implementability and relative costs of potential remediation alternatives. MDHES intends to conduct this RI/FS with full public participation. A community relations plan, which will detail opportunities for public involvement, is being developed. MDHES is willing to meet with any interested group, including local water users, to get that group's input into the investigation.

Comment 1.4.B recommends that stream channel improvements be directed to maximize flow to downstream users and minimize contaminant loading. The comment further suggests that a straight, narrow, deep channel can best accomplish those goals.

Response 1.4.B. Alternatives for channel stabilization and modification will be investigated during the conduct of the ARCO demonstration projects and will be fully evaluated during the evaluation of alternatives portion of the RI/FS. That evaluation will consider all aspects of stream channel improvements, including stream stability, flood management, erosion control, flow transport, fish and wildlife habitat, visual impacts, and water uses.

Comment 1.4.C recommends that MDHES consider the construction of dams in the Browns Gulch area for multiple use (flood control and water storage), with cost sharing by downstream water users.

Response 1.4.C. The alternative of impoundments on local tributaries for flood management purposes is included in the RI/FS Work Plan for consideration in the evaluation of alternatives for the operable unit.

Comment 1.4.D suggests that any water needed during implementation of remediation of Silver Bow Creek should come from the same source used during the mining and smelting operations (i.e., the Silver Lake source) and should be purchased from the present owner of that water.

Response 1.4.D. Information regarding the ownership of water rights pertinent to Silver Bow Creek will be investigated during the RI/FS. Potential water needs and appropriate water sources for remediation alternatives will be studied during the evaluation of alternatives.

Comment 1.4.E suggests that upper Silver Bow Creek water is being illegally impounded by the Berkeley Pit and therefore made unavailable for potential dilution of contamination in Silver Bow Creek.

Response 1.4.E. Evaluating and addressing sources of contamination upstream of the Streamside Tailings operable unit is beyond the scope of this RI/FS. MDHES must accept the fact that upstream contaminant sources will continue to exist and provide loadings to Silver Bow Creek during and after this investigation. Both the remedial investigation and the feasibility study will take into account to the degree possible the existence of and variability of those upstream loadings. For example, the potential for future treatment and discharge to Silver Bow Creek of up to 7.5 million gallons per day of water from the Berkeley Pit will have to be considered when evaluating future sediment transport, metal loadings, and streambank stabilization alternatives on Silver Bow Creek.

Comment 1.4.F states that MDHES and EPA should not be concerned about making Silver Bow Creek a fishery, suggesting that those agencies' mission is to protect the health and welfare of the environment, and that when Silver Bow Creek is cleaned up fish will return on their own.

Response 1.4.F. The Superfund laws require MDHES and EPA to remediate uncontrolled releases of hazardous substances. The primary purpose of this investigation is to select an appropriate remediation of existing uncontrolled releases along Silver Bow Creek. In this case, historic mining activities along Silver Bow Creek have caused such degradation of the creek, in terms of stream channelization, tailings deposition, and water quality, that fish have been eliminated from the stream altogether. The goal of the agencies'

remediation of Silver Bow Creek will be to return it to as close to premining condition as possible. Restoration of the premining habitat is a valid goal of the Streamside Tailings cleanup.

Comment 1.4.G notes that several landowners along Silver Bow Creek and the Clark Fork River have taken action to remove, cover, and revegetate tailings deposits on their lands and suggests that MDHES consult with those owners about their efforts.

Response 1.4.G. MDHES is interested in getting as much input as possible regarding potential remediation approaches for streamside tailings deposits. During the conduct of the RI/FS, we would hope to meet with the commenter and others to discuss any remediation efforts that they have attempted in order to gain the benefit of their experience.

#### 1.5 Comment Letter No. 5, Mel Rowling

Comment 1.5.A recommends the installation of a monitoring well on the west side of the Whiskey Gulch drainage to check possible contamination of the Silver Bow Creek drainage aquifers from the Butte aquifers.

Response 1.5.A. MDHES agrees with the concept of installing a monitoring well in the aquifer at the upper end of the operable unit. The Work Plan has been revised to require such a well. The details on the location, depth, and monitoring frequency of that well will be specified in the final Sampling and Analysis Plan for the groundwater investigation.

Comment 1.5.B recommends detailed review of the Montana Highway Department construction plans, especially in terms of soil testing for I-90 and I-15, to better understand soil conditions and potential near surface contamination along Silver Bow Creek.

Response 1.5.B. MDHES agrees that it would be beneficial for ARCO's contractor to review existing soils information, as well as pertinent construction plans, to understand Silver Bow Creek drainage and depositional patterns. This work would be done in conjunction with review of present and historical aerial photography, mapping, and literature. It is doubtful that the Highway Department data includes information regarding metals content and general contamination of those soils, so the RI/FS Work Plan includes considerable additional testing of the existing soils for contamination.

Comment 1.5.C recommends that the RI/FS Work Plan include investigation of mercury contamination where old placer operations occurred along Silver Bow Creek and its tributaries. It further recommends review of old railroad records for details on sluicing

and other hydraulic systems that might have been used before 1890.

Response 1.5.C. MDHES agrees that soils samples taken near known placer operations along Silver Bow Creek should be analyzed for mercury and the Work Plan has been modified to provide for identification of those operations and analysis of appropriate samples for mercury. Existing records, including the railroad records, will be used to the degree possible to help identify appropriate sampling locations. Whether to investigate placer operations on tributaries presents the problem of determining how far upstream on those tributaries to proceed. MDHES has determined that soils investigations under this RI/FS will be limited to the Silver Bow Creek area. We will attempt to determine if historic tributary placer operations are affecting Silver Bow Creek by monitoring water quality of the major tributaries. We have added monitoring for mercury in surface-water samples from major tributaries for that purpose.

Comment 1.5.D suggests that the Blue Bird Mill area be included in the Streamside Tailings investigation.

Response 1.5.D. MDHES inspected the Blue Bird Mill site, located north of Silver Bow Creek just east of Rocker, and evaluated the merits of investigating it as part of the Streamside Tailings operable unit. We also discussed with EPA the inclusion of the site as part of the future EPA investigation of Butte nonpriority soils. MDHES has determined that (1) the investigation of the Blue Bird Mill will require an intensive effort to identify, locate, quantify, and characterize mill site wastes, (2) the investigation will study sources and contaminants that are beyond the scope of the Streamside Tailings site, (3) the site will be investigated under the Butte nonpriority soils operable unit, and (4) remediation of the railroad beds under the Streamside Tailings operable unit will likely provide adequate protection from contaminant migration to Silver Bow Creek from both the railroads and the Blue Bird Mill site. Although MDHES recognizes that there is some potential for contamination from the Blue Bird Mill to affect Silver Bow Creek, we are confident that remediation of the railroads will adequately isolate that contamination until the Blue Bird site is remediated, and have therefore omitted the Blue Bird Mill from this investigation.

Comment 1.5.E suggests that old railroad records, including information on placer operations, rights of way, culvert situations, and engineering plans, be investigated to better understand the Silver Bow Creek drainage.

Response 1.5.E. MDHES agrees that review of old railroad

records would be valuable in better understanding the near-surface soil characteristics and the locations of tailings deposition. That literature investigation will be done to the degree possible for planning the soil sampling efforts for both the railroad bed sampling and the general tailings and contaminated soils sampling. However, information regarding metals concentrations in the near-railroad soils is also needed from this investigation, so additional sampling will be necessary.

Comment 1.5.F recommends the installation of a monitoring well just west of Browns Gulch to investigate possible groundwater contamination of the aquifer from the old duPont complex near Ramsay.

Response 1.5.F. The Sampling and Analysis Plan for the groundwater investigation will include a transect of monitoring wells across Silver Bow Creek in the vicinity of Ramsay. One of the transect wells located distant from Silver Bow Creek will be used to monitor for potential inflow contamination from outside of the operable unit. However, investigation of potential contamination specifically from the duPont site is outside of the scope of this investigation, which is intended to address contamination from fluvially-deposited tailings in the Silver Bow Creek floodplain.

Comment 1.5.G recommends that a monitoring well be installed at the west end of German Gulch.

Response 1.5.G. The Sampling and Analysis Plan for the Phase I groundwater investigation will include a monitoring well near the Gregson Bridge. Although no Phase I monitoring well is proposed for the mouth of German Gulch, it is expected that the proposed Gregson Bridge well will be sufficient to address the issue of potential groundwater contamination in the upper portion of the Deer Lodge Valley. Additional Phase II wells may be required.

Comment 1.5.H notes that review of well data and drilling logs from Fairmont Hot Springs might be worthwhile.

Response 1.5.H. The focus of the Streamside Tailings groundwater investigation will be to determine if contamination of the shallow and deeper aquifers exists immediately adjacent to Silver Bow Creek. Pertinent information from existing wells nearby will be reviewed to the degree possible.

Comment 1.5.I suggests that ARCO should not be held responsible for the cleanup of mercury contamination resulting from the historic mining activities prior to Anaconda operations.

Response 1.5.I. MDHES has noticed ARCO as the potentially responsible party for the cleanup of the Streamside Tailings operable unit. ARCO, with its signing of the Administrative Order on Consent for the RI/FS, has agreed to investigate all mining-related contamination in the operable unit, including contamination that may have been caused by other potentially responsible parties, and evaluating alternatives for remediation of that contamination. The issue of liability for and payment of the costs of remediation is separable from the investigation.

#### 1.6. Comment Letter No. 6, Peter Nielsen

Comment 1.6.A requests clarification on how MDHES intends to coordinate the Streamside Tailings investigation with other RI/FS activities for other sites and operable units and related studies (e.g., the regional waste repository siting) now active or planned in the Clark Fork Basin.

Response 1.6.A. The draft Streamside Tailings Work Plan stated that this investigation would be coordinated with adjacent Superfund investigations. The language in the Work Plan has been revised to expand on the concept of coordination.

Since the Rocker operable unit is essentially surrounded by the Streamside Tailings operable unit and the RI/FS investigations are underway concurrently, there will be considerable sharing of both data and evaluations of alternatives. The Streamside Tailings site will investigate tailings deposits, stream contamination, the railroad beds, and environmental and health risk issues in the Rocker area. The Rocker site will investigate specific facility-related contamination of soils, groundwater, and the railroad sidings. Potential contaminant transport and remediations that could affect either site will be considered by both sites.

The Montana Pole Superfund Site deferred investigation of potential organic contamination of Silver Bow Creek to the Streamside Tailings operable unit. Remediation of possible organic contamination in surface waters or sediments downstream of Montana Pole will take place under Streamside Tailings.

Coordination with the Butte sites is more difficult to address. Activities in Butte have the potential to increase loading to Silver Bow Creek in the short term, while remediation is underway, and then reduce contaminant loading in the long term. Quantifying existing degradation and estimating future improvements to Silver Bow Creek will be very difficult given the variability of future loadings.

Unknown loadings will begin with the remediation of the Colorado Tailings and continue through other upstream cleanup actions, including particularly stormwater runoff remediation. The discharge of treated Berkeley Pit water will further change both the volume and quality of Silver Bow Creek flows in the future. The timing of implementation of Streamside Tailings remediation may depend to a large extent on the timing of each of the upstream remediation activities. Given the uncertainty associated with future upstream loadings, it is MDHES' present position that the Streamside Tailings investigation should focus on the identification and remediation of contaminant sources within the Silver Bow Creek floodplain, i.e., the tailings deposits themselves. The evaluation of alternatives, especially in relation to streambank stabilization and channel protection, will necessarily take into account a range of potential upstream loadings and the chances of recontamination before upstream remediation is effected.

Downstream Superfund sites and operable units that will be coordinated with the Streamside Tailings site include the Warm Springs Ponds and the Clark Fork River operable units and several Anaconda studies, including the Regional Soils investigation and the Regional Groundwater investigation. The Streamside Tailings remediation and other upstream remediations have obvious impact on the loadings to the Warm Springs Ponds and any determination as to the final status of the ponds. MDHES intends to utilize information from the Clark Fork River risk assessment to help determine environmental risk along Silver Bow Creek. Since Silver Bow Creek is so severely impacted, it will not be possible to directly measure environmental risk in Silver Bow Creek in terms of aquatic species diversity and health.

Coordination with non-RI/FS investigations includes primarily the waste repository siting study discussed in response to Comment 1.6.B.

Comment 1.6.B recommends that the Streamside Tailings RI/FS include an investigation of potential available nearby sites for disposing of wastes associated with the Streamside Tailings site.

Response 1.6.B. MDHES agrees with the need to fully evaluate potential waste repository sites before the final evaluation of alternatives is made in the feasibility study. A waste repository study was completed in the Anaconda area last summer. A similar study is ongoing for Silver Bow County now. In addition, EPA has committed to fully completing a regional waste repository siting study within the next year, or well before the Streamside Tailings RI/FS is to be completed. MDHES proposes to use those siting studies as the basis for the evaluation of appropriate waste disposal sites in the



RI/FS. However, after review of the conducted studies or study work plans, if MDHES determines that the studies are insufficient to address the needs of disposal of Streamside Tailings wastes, it will be necessary to have ARCO augment those studies to fully evaluate remediation alternatives. Language has been added to both the Administrative Order on Consent and the Work Plan to provide for additional siting study as necessary.

Comment 1.6.C suggests that the groundwater investigation include comparison of monitored groundwater quality with background conditions, stating that comparison with primary drinking water standards only is not adequate.

Response 1.6.C. The Streamside Tailings RI/FS will include monitoring for groundwater quality in shallow and deep aquifers in the operable unit, both near Silver Bow Creek and at a distance from the stream. In addition, monitoring of selected existing residential wells will be continued. It is thought that this level of investigation is adequate to define the overall level of contamination in the shallow and deep aquifers in the operable unit, and to allow identification of and comparison to those areas where groundwater is unaffected or minimally affected by metals contamination.

Comment 1.6.D recommends that the demonstration projects demonstrate, in addition to tailings removal and immobilization, the restoration of riparian habitat and streambanks. In addition, the comment recommends that any tailings removed be placed outside of the Silver Bow Creek floodplain.

Response 1.6.D. The RI/FS Work Plan provides a general description of two proposed demonstration projects. These projects include elements of tailings handling that involve both removal and in-place stabilization. Work plans for the two demonstration projects have not been finalized. Initial proposals have been received from ARCO and are being reviewed by MDHES and its contractors. The comments provided will be considered in the review of the Demonstration Project Plans. After the document has been reviewed by the agencies and revised as necessary, copies of the plans will be made available and MDHES will discuss the plans with interested members of the public.

Comment 1.6.E recommends other treatability studies for inclusion in the Streamside Tailings RI/FS. Specifically recommended are two technologies that may reduce the toxicity of mine wastes, air-sparged hydrocyclone and solvent extraction/electrowinning.

Response 1.6.E. These are two technologies that will be evaluated during the evaluation of alternatives element of the

RI/FS. Whether they are developed as treatability studies depends on the outcome of initial evaluation of the status and applicability of these technologies to the Streamside Tailings site. The Administrative Order on Consent and the Work Plan contain provisions for the development of additional treatability studies as necessary.

#### 1.7 Comment Letter No. 7, Karl J. England

Comment 1.7.A suggests that the Consent Order should make clear that ARCO acknowledges that the RI/FS is consistent with the NCP.

Response 1.7.A. The suggested change has been made by the addition of a sentence to that effect at the end of Section VII.

Comment 1.7.B suggests that the notice provisions of Section IX of the Consent Order should include express acknowledgements by ARCO of the notices given.

Response 1.7.B. The suggested change has been made in that Section of the Consent Order.

Comment 1.7.C notes that Section X of the Consent Order references CERCLA, which is not defined in Section II.

Response 1.7.C. Although not included in the "Definitions" in Section II, the acronym CERCLA is identified in Section I on Jurisdiction. In light of the comment, this reference has been clarified to include the full statutory citation for CERCLA where it is identified in Section I.

Comment 1.7.D notes that a reference to EPA in Section XI(C) (3) of the Consent Order should refer to MDHES.

Response 1.7.D. This erroneous reference has been corrected.

Comment 1.7.E states that Section XI(G) of the Consent Order provides that ARCO will be hiring contractors to perform work on the RI/FS, and that MDHES must approve the qualifications of the contractors. It suggests that the Consent Order should make clear that ARCO is responsible for the work of the contractor and that ARCO bears all responsibility should the contractor fail to perform any of the requirements of the Order.

Response 1.7.E. The Consent Order as proposed includes such a provision. Section VIII, Parties Bound, provides, "Respondent shall be responsible for insuring that all Contractors, consultants, firms and other persons or entities acting on behalf of Respondent with respect to matters included herein will comply with the terms of this Consent

Order."

Comment 1.7.F suggests that Section XI(I) of the Consent Order, dealing with ARCO's comments on the risk assessment, public health evaluation and ARARs analyses, should indicate that ARCO's comments are going to be treated like all public comments and that any such comments and MDHES' responses will be included in the administrative record.

Response 1.7.F. Section XI(I) does provide that any ARCO comments on these documents and any MDHES responses will be included in the administrative record. ARCO's comments on these documents are to be provided on a specific schedule that is set out in Attachment 2 to the Consent Order, and under that schedule ARCO comments are sometimes required to be submitted by deadlines that differ from the schedule for public comments. Moreover, MDHES is not bound by the terms of the Consent Order to respond to such ARCO comments in the manner in which it must respond to public comments properly submitted during a comment period.

Comment 1.7.G notes that Section XVI(C) of the Consent order is confusing because of its grammar and suggests revisions.

Response 1.7.G. The grammar in the proposed order was confusing and has been revised along the lines suggested in the comment.

## 2.0 PUBLIC ORAL COMMENTS

### 2.1 Public Oral Comment No. 1, Melvyn Rowling

Oral comments 2.1.A through 2.1.H are identical to the comments in Comment Letter No. 5 and are responded to in Section 1.5. Two additional public oral comments were provided by Mr. Rowling which are addressed below.

Comment 2.1.A requests that railroad company records of concentrate spillage for the post-1962 period be investigated.

Response 2.1.A. The investigation of the railroad beds will include field investigation of potential ore spillage, as well as review of historical records of ore spillage.

Comment 2.1.B suggests that construction plans for the Silver Lake pipeline supplying the Weed Concentrator be investigated for pertinent information.

Response 2.1.B. Attempts will be made to review pertinent construction plans of this and other local construction projects. However, it is likely that information regarding the specific location and characterization of tailings and contaminated soils will not be found in those plans. The RI/FS contains provisions for collection and analysis of tailings and soils for the specific purpose of identifying, mapping, quantifying, and characterizing those materials.

### 2.2 Public Oral Comment No. 2, Albert Molignoni

Comment 2.2 opposes the use of institutional controls and zoning to prohibit certain land uses, including well-water use, in the event that properties and the aquifer become contaminated. The commenter recommends that MDHES clean up the contamination so that the creek and the aquifer can be used without concern over contamination.

Response 2.2. The RI/FS will investigate both issues raised by the comment. First, the investigation will determine the extent of any existing contamination of aquifers in the operable unit, as well as make an educated evaluation of the potential for future contamination from sources within and outside of the unit. Second, the investigation will evaluate the use of certain institutional controls that may be used to improve and augment remediation strategies under consideration at the site. MDHES does not consider the use of institutional controls to be a replacement for site remediation unless no feasible remediation alternative were available. It is MDHES' intent that cleanup at the site be complete enough that

*institutional controls may be necessary only to enhance that cleanup.*

### **2.3 Public Oral Comment No. 3, Ron Kelley**

Comment 2.3.A recommends that the plan implemented on Silver Bow Creek be designed to maximize the flow of water into the Clark Fork River.

Response 2.3.A. *This comment is identical to Comment Letter No. 4 by the same commenter. Please refer to Response 1.4.B.*

Comment 2.3.B suggests that the investigation includes identification of who owns Silver Bow Creek water by appropriation. The comment additionally states that if any property right or water right is lost by someone for use in the Streamside Tailings project, either by institutional controls or by outright use of water, then that individual should be amply compensated.

Response 2.3.B. *The RI/FS Work Plan has been revised to include investigation of the ownership of rights to Silver Bow Creek waters. That information will be used in the development and evaluation of alternatives for Streamside Tailings remediation. Compensation for affected property or water rights will be considered during the evaluation of the relative implementability and the relative costs of potential remediation alternatives.*

Comment 2.3.C states that remediation at the Warm Springs Ponds is continuing even though no involved party has a right to put water into those ponds.

Response 2.3.C. *The issue of water rights and how they affect and are affected by potential remediation alternatives will be fully considered during the Streamside Tailings RI/FS.*

### **2.4 Public Oral Comment No. 4, Ole Ueland**

Comment 2.4.A requests that the investigation look into the uptake of metals in vegetation that will be used for grazing.

Response 2.4.A. *The RI/FS Work Plan provides for the collection of vegetation samples for analysis of metals uptake. In addition, the ongoing Streambank Tailings and Revegetation Study (STARS) is also collecting information regarding the uptake of heavy metals in vegetation growing in amended tailings plots.*

Comment 2.4.B suggests that the reports be written so that average citizens can read and understand them. The comment additionally

suggests that the RI/FS participants meet with local citizens and ranchers to discuss the investigation.

Response 2.4.B. MDHES agrees with the comment and intends to do whatever it can to make sure that Streamside Tailings reports are readable and understandable. MDHES also intends to meet with any interested groups and individuals to gather input for the investigation and to explain the study.

Comment 2.4.C recommends that the RI/FS participants work with the steering committee that is being formed to develop the comprehensive water plan for the Clark Fork Basin.

Response 2.4.C. MDHES agrees with the need to coordinate with water planners in the Clark Fork Basin, both to pass to those planners information regarding potential Silver Bow Creek remediation and to gather input for the evaluation of remediation alternatives.

Comment 2.4.D recommends the consideration of multiple use reservoirs on Silver Bow Creek tributaries and the collection of adequate data to evaluate such reservoirs during the evaluation of alternatives.

Response 2.4.D. The alternative of tributary impoundments will be evaluated during the feasibility study.

Comment 2.4.E expresses concern about acid conditions on lands adjacent to Silver Bow Creek and notes that mixing of the underlying and surface soils during excavation of the Silver Lake water line seemed to reduce the acidity enough to promote good alfalfa growth.

Response 2.4.E. The comment has been noted. Mixing of surface contaminants and underlying soils has been noted at some of the STARS plots. When the STARS work is completed, we expect to be able to make some judgment of the benefits of this sort of dilution of contaminants.

Comment 2.4.F recommends that MDHES and other Streamside Tailings RI/FS participants consult with personnel from the Soil Conservation Service.

Response 2.4.F. MDHES agrees with the comment and will contact the Soil Conservation Service to discuss the amendment and revegetation studies and the potential application of those technologies to Streamside Tailings remediation.

Comment 2.4.G would like to see additional groundwater monitoring wells installed.

Response 2.4.G. The RI/FS Work Plan includes a two-phased

approach for additional groundwater monitoring. Additional monitoring wells will be installed this year at key locations. If any contamination is found in those wells, a larger number of monitoring wells will be installed during the second phase next year. The specific locations of the monitoring wells will be identified in the Sampling and Analysis Plan for the groundwater investigation.

### 3.0 COMMENT LETTERS AND PUBLIC ORAL COMMENTS TRANSCRIPT



RECEIVED

AUG 15 1991

Montana Department of Health  
and Environmental Sciences  
Solid and Hazardous Waste Bureau

Don R. Stoecker  
Georgetown Lake  
Anaconda, Mt 59711

Mr. Neil Marsh  
Site Project Manager DHES

Issue: Silver Bow Creek Streamside Tailings

Dear Mr. Marsh

The sloping back of the tailings from the stream bank and then revegetating as in the demonstration plots seems to be the best remedy so far unless a process is found to remove the metals from the tailings. The above remedy only in the open flat areas.

It was mentioned to turn some of the historical wetlands back into wetlands. Maybe yes maybe no. Were these wetlands formed by the creek spreading out in the flat areas or a combination of the creek and underground sources. If the wetlands were from underground sources than we may have a few small Colorado tailings. The research of the shallow aquifer should hopefully reveal any of these sources.

The comments made to test the soils of Whiskey, Brown's, German Gulch and maybe others for mercury should be taken seriously.

May the suggestion to Hydraulic wash the canyon out into the ponds should be considered.

If the Berkely Pit level can't be maintained to where the water won't contaminate the Rocker and Ramsey water source institutional control shouldn't have to be put into effect as the residents now won't have any water either. Maybe a new water source could be from the big hole river existing pipe line or from the silver lake water source.

Sincerely;

*Don R. Stoecker*  
Don R. Stoecker  
Board of Directors  
Clark Fork Coalition  
Vice Pres. Pintlar  
Audubon So.

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AUG 15 1991

Montana Department of Health  
and Environmental Sciences  
Solid and Hazardous Waste Bureau

Dear Neil,

After attending the meeting in Ramsey Tuesday evening, I did have 2 few comments that I would like to make.

First and foremost is my concern on ground water contamination flowing down the aquifer from Berkeley Pit the Colorado tailings and the Ramsey Slats. If our well becomes contaminated, our home & property is worthless.

There are other causes for concern which will add to the problems besides the old mine tailings. If heavy industry is brought into the area as is scheduled, this will also affect the aquifer as well as residues, herbicides & fertilizers on surrounding irrigated farmlands.

I'm very interested in maintaining water in Silver Bow Creek for fish & wildlife as well as allowing the construction of wet lands and ponds along the creek to filter the contaminants out of the water. These ponds & wet lands are very beneficial in maintaining clean water as well as habitat for fish & wildlife. It is very important to maintain maximum instream flows to help dilute the water as it moves down the system. These instream flows should take precedent over downstream irrigation projects.

to help protect the health & welfare  
of people living along the creek - our  
state constitution gives us this guarantee  
and it should be followed.

Please keep me informed as the  
process continues.

Sincerely,  
Tony Schom

To Neil Marsh, PM  
MDHES, Cogswell BLDG  
Helena, MT 59620

8/23/91

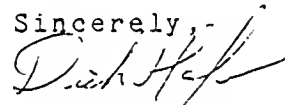
From Dick Hafer, RC&D Ag Water Committee  
#3 Copper RD.  
Anaconda, MT. 59711

RE; Streamside Tailings RI/FS

Dear Neil:

We are glad to see the problem of water pollution addressed in the Clark Fork Basin, however we do have the following concerns.

We feel that we have not been included in the planning of remedial actions that have taken place in the past or are being considered in the future. Because these activities will have an effect on our industry and our members own the water rights for the streams involved in these Superfund actions we intend to take an active part in the Superfund program where water or agricultural land is involved. We hope that you do not intend to divert, impound or impede in any way water that our members own water rights to. We hope that you remember that agriculture is the number one producer of revenue in the state and we cannot allow that to be put in jeopardy for any reason.

Sincerely,  
  
Dick Hafer  
#3 Copper RD  
Anaconda, MT 59711

copy;  
Tilman  
Clemow  
Kelley

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AUG 21 1991

Montana Department of Health  
and Environmental Sciences  
200 N. 1st Avenue, Helena, MT 59601

# Neil Marsh Project Manager

Comments For the Formal Record on  
the stream side tailing Remedial Investigation  
Feasibility Study

These Comments are in addition to the  
oral comments given August 13<sup>th</sup> at the  
Armsey School

The Following comments are given by  
Ronald C. Kelley. 350 Greenhouse Rd. Deer Lodge.  
mt. 59722 - phone 846-3825 Home And 846-7300 Day time

7  
1. An investigation should be made to determine who owns the beneficial use of the water in Silver Bow Creek as described by Montana Law. This should include the Down stream users including those down stream from the urban springs ponds. How these water users would be affected by any action should be considered. If the water users would be adversely affected they should be compensated. Every effort should be made to contact the owners of water rights for their input.

2. Any change in the channel of the creek should be done in such a manner to maximize the flow of water to Down stream users in addition to minimizing the contaminants that could enter the stream. A straight, deep, narrow rapidly moving stream would be the most efficient type of channel to convey water and minimize contamination.

3. From a recent flight over the entire creek it is obvious that the Ramsey Flat or the Alameda Fan where Browns gulch joins the Silver Bow Creek is a major problem. As long as flood waters are

Allowed to wash into this Area During Spring run off Any Action to remediate this part of the stream will be wasted.

An option would be to construct Dams in the Brown Gulch Area to Catch the heavy Spring run off. These waters could then be used During periods of low flow to reduce the concentrations of contaminants. These projects could serve several purposes and be cost shared by Agriculture users.

4. If it is determined that the use of water is needed in the remedial Action the source of water that was used During the mining and smelting operations should be used before taking water from other sources. The water I am referring to is the water that came from the Area west of Anaconda that was pumped to Butte. If this water has been sold then it should be repurchased until all remediation is completed.

5. The Berkley Pit is filling up with water. This is water that is accumulating from Run off and from the Aquifer.

If the water were not filling up the Berkley pit it would be running down Silver Bow creek And other Drainages.

that form the head waters of the Clark Fork River. This is also water that would help dilute the contaminants along the stream side. Please refer to Montana water law 85-2-102 under the definition of "Appropriate". I feel the water being impounded in the Barkley Pit at this time is illegal and is causing a degradation of the Silver Bow creek by the reduced flow.

C. There has been talk about making Silver Bow Creek a Fishery. The Montana Department of Health and Environment Sciences has no business being in the Fish business and should not spend time and money doing so. When the stream is suitable for fish the fish will migrate on there own and will be welcomed by all. The same comment is directed to the Environmental Protection Agency there mission is to protect the health and welfare of the environment. Lets not lose track of our assigned mission.

T. Land owners along the Silverbow creek and the Clark Fork River have over there own taken action to remove, cover and revegetate areas called slickens with varying degrees



of success. I feel that the local owners should be consulted and the projects that they have conducted should be investigated for the cost effectiveness and degree of effectiveness in eliminating future pollution. There is one specific project that was done about 10 years ago that I feel was very successful and should be investigated.

Donald Kilby

**ROWLING'S  
TECHNICAL SERVICES, INC.**

P.O. Box 178 (123 So. Dakota St.)  
Butte, Montana 59703  
Phone (406) 723-4569 or 723-4570

August 22, 1991

Neil Marsh  
MDHES - Superfund  
Cogswell Building  
Helena, Montana 59620

Ref: Streamside Tailings  
Silver Bow Cr.  
Superfund  
(Written Comment)

Dear Neil:

This is my written comment (for record) on the Streamside Tailings Work Plan.

As I stated in my oral views, August 13, 1991, I shall address eight (8) items of concern and why these items should be addressed under the proposed Work Plan.

(1) A few years ago, I suggested to EPA (Russ Forba) that a ground water monitoring well be placed on the west side of the Whiskey Gulch Drainage, just before its egress into the Silver Bow Creek Drainage. The position of this monitoring well should be located in the Northhalf of the Northwest Quarter of the Northeast Quarter (N $\frac{1}{2}$  NW $\frac{1}{2}$  NE $\frac{1}{2}$ ) of Section Twenty Two (22), Township Three (3) North, Range Eight (8) West, P.M.M.

This monitoring well is very important in regards to the Butte Hill water, especially for the west camp.

The Whiskey Gulch Drainage is a creation of the Whiskey Gulch Fault. The Whiskey Gulch Fault is a major factor in regards to geological formations in this area.

The Green Lake seep is directly connected with the Whiskey Gulch Fault System. Associated with this system are major vein structures; being the Anglo Saxon, Orphan Boy and Kit Carson. These veins have been heavily mined in the past by the Orphan Girl Mine, Orphan Boy Mine, Nettie, and Minnie Jane. The Orphan Girl was the major mine in this area, with workings to the 2800 foot level. This mine had sills, stopes and raises which held to the other mines on the 300, 500, and 700 foot working levels, thus interlocking the ground water system in the area to a direct flow exiting in the Whiskey Gulch Drainage. The Kit Carson vein, Nettie and Minnie Jane structures carried high values in lead ore.

I believe a monitor well at the mouth of Whiskey Gulch is important to check water levels and to check possible contamination into Silver Bow Creek Drainage.

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AUG 26 1991

MONTANA DEPARTMENT OF HEALTH  
AND ENVIRONMENTAL SCIENCES  
DIVISION OF HAZARDOUS WASTE SURF

(2) I suggest that the Work Plan review, in detail, the Montana Highway Department's (P-Line), preliminary construction plans and other documents in regards to soil testing, culverts and bridge situations.

There are thousands of dollars spent to review soil conditions before placing highways and bridges on the proposed highway taking.

Some of this previous work may save time and money on this proposed work plan.

(3) I suggest that the Work Plan review, in detail, some of the old placer workings along the Silver Bow Creek Drainage. There may be pockets of mercury in these old placer workings.

The old placer workings can be readily located by historical research and tied to cadastral surveys, via mineral surveys.

Some of the major placer claims, which may have used mercury and/or amalgamation for gold recovery, are:

ROCKER AREA: Iselle Placer (M.S. 1144), Concentrator (M.S. 2140), Ulrich Placer (M.S. 7884), Carver Placer (M.S. 1849), and Spier-Bauer Placer (M.E. 1445).

DURANT CANYON AREA: Jenner Johnson Placer, Rocker Placer, Kessler Placer, Swallow Nest Placer, Gregson Placer, Gray Gravel Placer and Willow Placer (M.S. 9010).

GERMAN GULCH DRAINAGE: King Placer (M.S. 6587), Placer (M.S. 606) (I believe these claims are now owned by Montana State F.W. & P.)

Also, the review of old railway maps for rights of way taking may reveal old storage ponds, dams and sluicing systems, that may have been employed prior to 1890.

(4) The Blue Bird Mill area should be included in the Work Plan. This mill is located on the Cleveland Lode (M.S. 1839) and the Carver Placer (M.S. 1849), located in the Northhalf of the Northwest Quarter of the Northeast Quarter ( $N\frac{1}{2}$  NW $\frac{1}{4}$  NE $\frac{1}{4}$ ) of Section Twenty One (21), Township Three (3) North, Range Eight (8) West, P.M.M.

Other information on this mill can be researched at Montana Tech. Seven professional papers, from 1888-1940, are of record.

It would require some time to critique this historical data. But, I feel this time and effort is important to get a full understanding of this mill site and the ores which were processed through it.

(5) Old railroad and railway maps, documents and field notes should be investigated for their relationship with the Silver Bow Creek Drainage. Placer locations, culvert situations, rights of way taking and historical data on construction plans and rights of way maps were composed and drafted in engineering detail. These documents should be incorporated and become a part of the Composite Work Plan.

The old rail companies in the area were:

Utah & Northern, Northern Pacific (BN), Chicago, Milwaukee & St. Paul, Oregon Short Line and Butte, Anaconda & Pacific.

It does take time to find and review these documents, but questionable areas of the stream can be answered by studying these old records.

(6) I would recommend that a monitoring ground water well be located north of Interstate Highway 15 and just west of the Browns Gulch Creek Drainage.

This well should tell whether or not any contamination of nitrates are coming from the old DuPont Complex, north of Ramsay. Monthly tests should be a requirement.

(7) I would recommend that a monitoring well be placed on the west end of German Gulch and tested monthly.

(8) Rowling's Technical Services (R.T.S.) has done a substantial amount of water investigations for Fairmont Hot Springs. Some of the general data is of record at the Montana State Water Quality Bureau. If requested, R.T.S. has some detailed drill logs for review, but must have approval from Fairmont before said information can be released.

COMMENT:

I have read the Streamside Tailings Operable Unit Draft Work Plan. I noticed that there is no mention of mercury in the Work Plan. It is my opinion that, if mercury is detected in the Silver Bow Creek Drainage, ARCO-Anaconda should not be obligated for its clean up. The mercury was there prior to ARCO-Anaconda workings. Clean up of mercury pockets may be a legal question to be answered by the State and/or EPA.

Respectfully yours,



cc: Silver Bow Cr. file  
MR: sr



## Clark Fork Coalition

P.O. Box 7593 • Missoula MT 59807 • (406) 542-0539  
P.O. Box 1096 • Sandpoint ID 83864 • (208) 263-0347

**RECEIVED**

September 4, 1991

SEP 05 1991

Neil Marsh  
Solid and Hazardous Waste Bureau  
Cogswell Building  
Helena MT 59620

MONTANA DEPARTMENT OF HEALTH  
AND ENVIRONMENTAL SCIENCES  
SOLID & HAZARDOUS WASTE BUREAU

Dear Neil,

Thanks for taking the time to visit with me a couple of weeks ago regarding the Streamside Tailings draft work plan. It is very helpful, I think, to have the opportunity to visit in a small group to discuss issues such as these. Its very much to your credit, and to Jane Stiles' also, that the DEpartment is able to reach out to the public in this way.

I gave you a few comments on the draft plan when we met, and repeated some of those comments at the public meeting in Missoula. I'm writing today to put our comments on record for your future reference.

Overall I think you have a good plan, and its obvious that you have taken the project very seriously. We have a few general comments, and some comments on the subjects of waste respositories, and demonstration projects.

On page two the draft mentions the need to incorporate the results of RI/FS studies from adjoining sites to fully ascertain the effects of remedial actions at the Streamside Tailings site. We agree. However, we wonder whether you really intended to refer to applicable RI/FS results at all Clark Fork basin sites, not just those at adjoining sites. Maybe this is a petty point, but it seems that there may be valuable results from sites that don't directly adjoin the Streamside Tailings unit. Also, it is very likely that information from investigations other than RI/FS studies could be applied, such as a

basin-wide investigation of waste repositories, etc... In any event, the issue of intersite coordination is an important one for this operable unit. The obvious question is how the timing of investigations at other sites, such as perhaps Opportunity Ponds, Clark Fork River or Butte mine flooding, might influence the results of this RI/FS. Perhaps you could let us know a little more about how you see intersite coordination working out for this operable unit.

On the issue of waste repositories. We believe it would be very valuable, and probably necessary, for the RI/FS to provide information on available waste disposal locations. As you know, the Coalition has been interested in this subject for some time. We would like to see the alternative of tailings removal addressed fairly in the FS. In order to do that, it is necessary to assess the costs and implementability of removing all or a portion of the tailings on the operable unit and transporting these wastes to a nearby disposal site. While it may be possible to address a hypothetical alternative which involves removal of wastes to an unknown, nearby disposal site, that alternative would lack practical applicability simply because no nearby disposal sites actually exist. I hope that this lesson was learned well during the decision processes for the Wartm Springs Ponds and for the Colorado Tailings.

We suggest that this RI/FS workplan include specific requirements to screen, investigate and site sufficient local waste repositories to handle the entire volume of wastes on the operable unit. We encourage the siting of multiple sites, not one great big mega-dump, on stable geologic soils out of the fluvial environment. We stress that this process should not stop at a screening stage, or even a preliminary investigation stage. If that occurs, then we believe that the FS will be flawed by failing to address a full range of alternatives, which we assert is required by law. If an investigation of waste repositories is performed through an independent process conducted by the EPA, this information may simply be incorporated into this RI/FS.

On page 32 there is a discussion of groundwater studies. It is stated that water samples from private wells did not contain metals in excess of primary drinking water standards. Certainly we should not be concerned only when standards are violated by contamination. We wonder how degraded the water quality in these wells might be compared to background conditions, and how more current sampling might compare to the 1989 results. What are the trends. How did low precipitation and stream runoff years during drought compare to more normal precipitation years?

Our remaining comments are on the subject of treatability studies and demonstration projects.

On page 51, under treatability studies, the workplan states that bench scale testing and field applications will be conducted for technologies that may reduce the mobility of contamination. We remind you that Superfund law requires a preference for technologies that reduce mobility, toxicity or volume, and not just mobility. Thus, if treatability studies are to be conducted as part of this RI/FS, we assert that it is important not to artificially limit the range of alternatives by restricting the technologies investigated to those that only reduce mobility.

For those demonstration projects discussed in the workplan which would involve removal of tailings or immobilization of tailings on the streambank, we suggest that the project also include an effort to demonstrate methods to restore streambanks and riparian vegetation/habitat. This element of work is, in our opinion, critical to the successful restoration of Silver Bow Creek.

For Demonstration project #1, we recommend that tailings be removed from not only floodplain areas where the groundwater is within 30 inches of ground surface, but also from those areas identified by the RI/FS as important sources of pollutants to Silver Bow Creek or groundwater. Excavated materials should not be disposed of in another location still in the floodplain. We argue that if you have already gone to the cost and effort of removing the wastes, it should not be much more difficult or expensive to dispose of the wastes in a repository outside the floodplain in an area with stable geologic soils.

For demonstration project number two, we generally agree with the objectives. We suggest that riparian zone restoration methods be included in this project.

We would like to review a copy of ARCO's demonstration project plan document.

We suggest that a specific and detailed monitoring plan be agreed to by the agency before approval of these demonstration projects.

In addition to the suggested demonstration projects, we request that treatability studies be conducted on technologies that may reduce toxicity of wastes. Specifically, we suggest that MDHES investigate the use of the air-sparged hydrocyclone under development for the past several years at Montana Tech., and a technology known as solvent extraction/electrowinning, used by numerous mining companies throughout

the world including leading U.S. copper producer Phelps Dodge. The Coalition and others have submitted much information on these technologies to the EPA regarding the Colorado Tailings EE/CA. If you need us to make copies of that information, please call us.

I hope these comments are helpful. Please contact me if we may assist in any way.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Nielsen', written over the word 'Sincerely,'.

Peter Nielsen  
Executive Director



KARL J. ENGLUND

*Attorney at Law*

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September 6, 1991

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SEP 09 1991

DHES LEGAL DIVISION

William Kirley, Esq.  
Special Assistant Attorney General  
Montana Department of Health and  
Environmental Sciences  
Cogswell Building  
Helena, Montana 59620

Re: Streamside Tailings -- Consent Decree

Dear Mr. Kirley:

I represent the Clark Fork Coalition. Peter Nielsen has shown me a copy of the draft Remedial Investigation/Feasibility Study Administrative Order on Consent and asked that I send you some brief comments.

In general, I believe you have done an excellent job and I compliment you for what appears to be a very comprehensive order. I do have the following specific comments and questions:

While I understand ARCO's insistence on the provisions of Section VII in which it denies all liability, it may be important to make clear that it cannot contest the fact that the RI/FS is consistent with the NCP.

In Section IX, the consent decree provides that ARCO is notified, pursuant to §75-10-711(3), that it may be required to reimburse the Fund for the State's costs. That sentence should also contain a acknowledgement from ARCO that it has received such notice.

Section X references CERCLA, which is not defined in Section II.

Section XI(C)(3) provides that failure to address any "EPA" comments or directions is a violation of the Order. Shouldn't EPA be changed to DHES?

Section XI(G) provides that ARCO will be hiring contractors. In light of the fact that DHES has determined that the contractors are qualified, it may be important to add a sentence making it clear that ARCO is responsible for the work of the contractor and ARCO bears all responsibility should the contractor fail to perform any of the requirements of the Order.

William Kirley, Esq.  
September 6, 1991  
Page 2

Section XI(I) deals with ARCO's comments on the risk assessment, public health evaluation and ARAR's analyses prepared by DHES. It should be made clear that ARCO's comments are going to be treated like all public comments and that any comments received, complete with any responses provided by DHES, will be included in the administrative record.

Section XVI(C) is confusing because of its grammar. It may be clearer if the second sentence provided:

In addition, he shall have the authority to immediately halt any activities at the Streamside Tailing Operable Unit which are being or may be undertaken and which cause or threaten to cause a public nuisance or which violate or threaten to violate any requirements of federal or state law, this Consent Order, or a Work Plan or Supplemental Work Plan established under this Consent Order.

Please let me know if you have any questions or if you need any additional information.

Sincerely,



Karl J. Englund

cc: Peter Nielsen

Remedial Investigation/Feasibility Study  
Administrative Order on Consent  
Public Oral Comments

Ramsay School, Ramsay, Montana  
August 13, 1991, 7:00 p.m.

RECEIVED

AUG 21 1991

Montana Department of Health  
and Environmental Sciences  
Solid and Hazardous Waste Bureau

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August 13, 1991, 7:00 p.m.  
Ramsay School, Ramsay, Montana

. . . . .

MELVYN ROWLING: I'm Melvyn Rowling. I reside in Butte at 315 North Jackson. I've lived here all my life. My grandparents came here in 1890. I've got approximately eight comments that I'd like to make here. Basically what I'd like to do is start at the top of the creek, considering the top of the creek now as the Colorado tailings, and go down to Warm Springs pond.

Comment number one is the Whiskey Gulch drainage. I had submitted a few years ago to Russ Forba a recommendation for a monitoring well located just before Whiskey Gulch enters the Silver Bow Creek. The reasoning for that was to monitor the water that would possibly be coming out of the West Camp via Green Lake. That water is also helped by the Norwich Mine, Minnie Jane and those other small mining operations on the West Camp.

Number two, I would recommend that the State, ARCO, review Montana State Highway P lines and original surveys of the bridge abutments that cross the creek right there at the Colorado tailings, and also at the highway heading south towards Dillon. The State Highway spends a hell of a lot of money evaluating soil conditions along

1 these areas. And I think that these would be very useful.

2 Along the same line, I would like to see the  
3 State and ARCO review the documentation, original  
4 documentations, of the BA&T, Utah Northern, the Oregon  
5 Shortline, the original P lines conducted back prior to  
6 1890, in that era. The BA&T, for instance, pushed their  
7 line through the area in 1892. And those documents, I'm  
8 sure, are of record at the offices of BAP or the  
9 surveyor's office in Anaconda now.

10 These documentations would also consist of the  
11 work sheets and other pertinent documents that were put  
12 together during the construction of the railroad. I think  
13 they may be helpful.

14 Number three, I've got some concerns about  
15 mercury in Silver Bow Creek. Prior to Marcus Daily and  
16 those folks coming in here, there was a lot of old-timers  
17 from 1862 to around 1880 that were in the area. And these  
18 folks spent a substantial amount of time placering the  
19 entire creek drainage all the way up to the Travona. But  
20 the major placers in the area are the Isele, the  
21 Concentrator, the Carver, the Spear Bauer. The reason I  
22 know these claims in pretty good detail, I've spent quite  
23 a bit of my working career surveying and doing historical  
24 background on these claims in my association when I was  
25 with the Anaconda Company.

1           Number four, the Bluebird Mill. We've talked  
2 about that the other night. I'd like to see -- Alfred  
3 also, I'm sure -- like to see that the plumage or the  
4 study area of the Silver Bow Creek also include the  
5 Bluebird Mill area.

6           When I was with the Anaconda Company, that was  
7 one mill we never had any real detail on. We had a lot of  
8 information on the old mills that were up in the water  
9 company building and everything like that; but this  
10 Bluebird Mill, there was very little information put  
11 together on that particular mill.

12           Going further down the creek, we enter the area  
13 of Ramsay, where we are at right now. And I would like to  
14 recommend that maybe some additional water studies be done  
15 on Browns Gulch Creek, just as a check. But also as the  
16 water egresses the DuPont complex. The DuPont magazine  
17 complex was a very large operation.

18           As a boy when my father was working for the  
19 North Butte Mining Company, we were down there every other  
20 day picking up powder and so forth. And I don't know.  
21 Maybe there's some contribution of contamination out of  
22 there that might surprise people. I don't know. It's  
23 something that I think should be looked at.

24           Down in the Durant Canyon there's several  
25 placers down there the old-timers were involved with.

1 Again, placer/mercury operations. George Kessler, Ivy  
2 Greson and Jennie Johnson, these placers were  
3 well-producing placers in the area. I think a study,  
4 again plumbing out of the Silver Bow Creek area, should  
5 study the placers coming in from German Gulch. The German  
6 Gulch, of course, has been a major producer of gold  
7 placers for many years. Currently the State of Montana  
8 owns some of those placers, Fish and Game. I think that  
9 maybe they should study some of that drainage in there and  
10 confirm whether or not there might be mercury laid in  
11 those gravels and sediments.

12 Down at the Fairmont area I've worked quite a  
13 few shifts for Fairmont Hot Springs and there is wells and  
14 well loggings that are available at the Fairmont complex.  
15 All you have to do is get with Ed Henrich down there and  
16 he'd be able to pull those logs. We cut those logs and  
17 they were put back there in storage. Some of that stuff  
18 would be useful. And I'm sure it would help the  
19 situation.

20 Basically that's the end of my comments.

21 Thanks.

22 NEIL MARSH: Thank you.

23 MELVYN ROWLING: Maybe I could add one more  
24 thing, please. I just made a note here. You talked about  
25 the railroad bed sampling. You may want to consider a

1 couple other items here as long as I'm here. Couple other  
2 items is the -- check with the BAP records and see if  
3 there was any spillage of concentration from 1962 onward.  
4 If there was any spillage from 1962, that should be noted  
5 in the BAP records, again in Anaconda.

6 Also, I had one other note here. I specifically  
7 worked on the fresh water line in the right-of-way  
8 acquisition for the pipeline coming from Silver Lake to  
9 the concentrator in 1962. That project was put together  
10 by Parsons Engineer. I know for a fact there's some  
11 cross sections and profiles of that entire line and there  
12 would have been some soil studies that were conducted  
13 along with that. I'm not -- I can't remember back that  
14 far, but I know that there was some information that was  
15 available in regards to the sediments and so forth that  
16 was associated with that water line.

17 That's the end of my comments. Thank you.

18 ALBERT MOLIGNONI: Good evening. Albert  
19 Molygoni, County Water and Sewer District in Rocker,  
20 Montana. I've been involved with this thing for I don't  
21 know how long. Ever since they declared Rocker a  
22 Superfund site.

23 I'm pretty much in agreement with what Mel's  
24 stating here. One thing I want to bring to the  
25 residents' -- and especially the rural residents --



1 attention here -- and this particular aspect really  
2 bothers me being a rural resident -- and that's this  
3 institutional control factor. The reason I'm really  
4 bothered with this is if it gets to a point in time where  
5 the well or the ground water, or even your property  
6 underneath is contaminated, you are going to be the  
7 responsible party, being a landowner, to either when  
8 you're digging sidewalks, digging foundations, digging for  
9 planting a tree, to dispose of this in a proper facility  
10 that will handle this type of contaminated soil.

11 The problem I have with this is that I didn't  
12 create it. The company that ARCO now represents, the  
13 Anaconda Company, was one of the major contributors of  
14 doing this. And as we all know with these institutional  
15 controls, I don't know how well they're going to be  
16 advertised. The problem I have is once you're  
17 indoctrinated into our zoning ordinances -- and we all  
18 know how zoning works out in our rural area. Rocker is a  
19 prime facility for the county wide -- county wide, let's  
20 say region wide landfill probably. Ramsay is going to be  
21 the area for probably large industrial development. I  
22 don't know. I do know we're getting the dump.

23 But anyway, what happens here is -- the way I  
24 understand it with these institutional controls, is once  
25 the zoning is implemented, anyone out in this area that

1 would like to build a home, live out in the country, say  
2 for instance and there was a contributing contamination  
3 factor there, they will not be able to build a home there  
4 because they can't drill a well. And if you don't have  
5 water, you're not going to live there. That's all there  
6 is to it. It's as simple as that. Not only that, but  
7 we're a prime agricultural area out here and we rely  
8 heavily on water and usage of the water and we don't like  
9 people fooling around with it too much. So I urge you  
10 people, keep tabs on this institutional control. How we  
11 can stop it, I don't know. But once it's enacted, I think  
12 we're done for. I really do. So that's the important  
13 factor I want to bring up here.

14 And this is a recommendation from ARCO, that  
15 these are going to have to be some of the things that are  
16 going to have to be enacted to go hand in hand with this  
17 cleanup.

18 If you remember a while back, the town of  
19 Livingston had a water contamination problem. What  
20 recourse do those people have? None. Absolutely none,  
21 other than trying to find another supply of water. And if  
22 you do get another supply of water, say we get a  
23 contamination factor out here, you've got a nice 32-inch  
24 water line running right by your town site here. But one  
25 of the owners beforehand was the Anaconda Company. So now

1 they've got a captive audience. Not only have we got  
2 contaminated ground, but we can buy the water off of it,  
3 or the Butte Water Company or whoever else gets it.

4 But believe me, this thing is too important. I  
5 urge the State and any plan they adopt, that if it's  
6 possible at all, to clean up the mess, get it out of the  
7 creek channel, to where we can still utilize the creek and  
8 utilize the water. Thank you.

9 RON KELLEY: My name is Ron Kelley. I represent  
10 the West Side Ditch Company, an irrigation district in the  
11 Deer Lodge Valley. My concern is for the water that is in  
12 Silver Bow Creek and its getting to the Clark Fork River,  
13 where our water, irrigation water, comes from. And I  
14 would urge that in this plan that all means be taken to  
15 design the channel in such a manner to maximize the flow  
16 of water to the Clark Fork River.

17 I would like to have the plan include who owns  
18 the water by appropriation. And according to Montana  
19 water law, the definition of "appropriate" means to divert  
20 or to use. Or the word "impound" is very specific in the  
21 law. To impound water is to appropriate it from the  
22 source. I guess I would like to see that no water is  
23 impounded illegally that is not owned by the person that  
24 is appropriating it.

25 If any institutional control needs to be put on

1 any ground, I would think that it should be required that  
2 the responsible party pay for whatever property right is  
3 taken away from that individual, whether it be divide the  
4 ground outright or to pay for whatever value is taken away  
5 from that owner's right.

6 I guess the same with the water. If the water  
7 is taken for use in this project in any way, shape or  
8 form, that the person who has the prior right to that  
9 water is amply compensated. I guess the government has  
10 the right of eminent domain to do that when it's in the  
11 public's best interest.

12 I would just point out that in the past when the  
13 action is going on in the Warm Springs pond, the ponds  
14 area, ARCO, Fish, Wildlife and Parks, neither one of them  
15 have a water right to put water into those ponds. I think  
16 we should be sure that this continued action is stopped at  
17 this time.

18 OLE UELAND: My name is Ole Ueland. I represent  
19 Ueland Ranches. My address is Silver Bow. I live up  
20 Browns Gulch. Ueland Ranches owns considerable land  
21 adjacent to Silver Bow Creek, so we are very interested in  
22 what is going on in Silver Bow Creek.

23 I would like to commend the activity of the  
24 various agencies, the Department of Health, ARCO and EPA,  
25 for taking some action to look into this. I would like to

1 say at this time that we are able to use water for  
2 irrigation out of Silver Bow Creek to some extent because  
3 of the cleanup that was brought about by the Department of  
4 Health. However, we are still wanting to know more about  
5 how we can continue to use this water and what might  
6 happen to it.

7 One thing in the area of vegetative cover, I  
8 note that you have had some demonstrations in putting  
9 vegetation sites, soil materials, plus soil additives,  
10 something like 18 inches, and planted it with grass. And  
11 these look very promising. Good. Nice grass growing out  
12 there. I think that was five years ago. But the question  
13 remains what uptake there might be into this grass in the  
14 way of heavy metals. And of course livestock eat this  
15 grass, to remind you in investigating this kind of a  
16 thing. In the past years we've only really had one animal  
17 condemned by the inspection service that inspected the  
18 butchered cattle. It is a popular thing to cap these  
19 areas and get some grass. Better look a little further to  
20 what effect, whether it's a good thing.

21 I think you could -- I guess you have it on your  
22 list there -- to analyze vegetation that's growing there  
23 now. There is considerable vegetation growing along the  
24 banks of Silver Bow Creek now. It looks good. Nice  
25 grass. It may be polluted too as far as the

1      aforementioned capping.

2                   In all of these investigations that you're  
3      making, I would like to see it documented so that the  
4      average guy like me can read them and respond to what's in  
5      them if we so desire. Us ranchers, we're on the defense  
6      most of the time, it seems like, when it comes to water  
7      quality and water use, water rights. And we certainly  
8      would like to see that in your investigations you work  
9      with us. I wouldn't mind going on a tour with you,  
10     especially to an area of land that we own and having you  
11     explain what you're doing. Maybe we can exchange some  
12     ideas that way.

13                  I know I've stood on the banks of Silver Bow  
14     Creek in a rainstorm and seen milky liquid drain into the  
15     creek. I'm sure that's probably polluted with metals.  
16     And of course we're very careful to shut down irrigation  
17     when we see something like that.

18                  We do have some organizations that are supposed  
19     to be working with water planning. Last legislature  
20     passed a law to put a moratorium on any new appropriations  
21     for water up Clark Fork Basin for a period of four years,  
22     contingent upon the development of a comprehensive water  
23     plan. Therefore, I think it would be well for you people  
24     who are investigating to work with whatever steering  
25     committee is put together and get your inputs to that.

1 And we can be -- that information can be available to the  
2 water committee.

3 As I look at it now, it is going to take more  
4 than four years. But we don't like to prolong it either.

5 Another thing, I'm dam crazy. By that I mean I  
6 like to build reservoirs, upstream, off stream for water  
7 availability in the dry seasons of the year, such as we  
8 have right now. I might say for multiple purposes,  
9 because my primary concern is for agriculture. But I sure  
10 would argue upstream storage can help the water quality  
11 situation. I know I will get arguments from the  
12 Department of Health when it comes to their attention. I  
13 can't help but think that good water stored in high water  
14 times can help to dilute poor water. I guess I'm getting  
15 into the remedy stage. But maybe some of this should be  
16 investigated too so we have better information to use and  
17 suggest remedies.

18 I don't have my glasses. I can't even read my  
19 notes. I'm concerned about the acid conditions on  
20 adjacent lands. Although this study is not really pointed  
21 to that, that would be some topic. But when we developed  
22 some of our adjacent lands, we found high acid conditions  
23 and the need for using lime.

24 Speaking of the water line that goes through  
25 this area, the field just adjacent to Ramsay here, with

1 all the construction that occurred along that water line,  
2 digging, soil put back, we have excellent growth alfalfa  
3 along that line. You can just see it stand out. It is  
4 kind of a mixing, but subsurface soil helped us there.  
5 Maybe that comes to the remedy thing too. I don't know  
6 where you can get all your technical help. I'm know  
7 there's disagreements between hydrologists and biologists  
8 and soil scientists and so forth. I hate to say that we'd  
9 like to make available the Soil Conservation Service  
10 people because they're limited, but they do make  
11 themselves available. Maybe they might compare notes with  
12 them. And particularly research people, state university,  
13 who we depend on a lot for our information on land use or  
14 soils analysis and so forth. You have already done some  
15 of that.

16 We're interested in a few more wells to test the  
17 ground water. We would like to know where they are and  
18 see them ourselves. We'd like to -- we have three wells  
19 we irrigate from flowing in excess of a hundred gallons  
20 per minute.

21 As I close, please look into the possibility of  
22 upstream storage, flood control. And I will be making  
23 some written comments. This is more or less off the top  
24 of my head. Thank you.

25 \* \* \* \* \*